Course Syllabus
Introductory Chemistry 1406

Math, Natural Science & Sports Sciences Learning Center
Division Office: P-330 Phone: 972-273-3500
Hours: Vary by semester so check the posted hours.

This course syllabus is intended as a set of guidelines for both on campus and online students. NLC and your instructor reserve the right to make modifications as necessary to promote the best education possible within prevailing conditions. If you have questions please check for the answer in ecampus or this Syllabus before you send me an email.

Instructor Information

<table>
<thead>
<tr>
<th>Instructor:</th>
<th>Cynthia Simmons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email:</td>
<td><a href="mailto:csimmons@dcccd.edu">csimmons@dcccd.edu</a></td>
</tr>
<tr>
<td>Office Phone:</td>
<td>972 860 3915 (best to email me)</td>
</tr>
<tr>
<td>Office:</td>
<td>A369 (Main Campus)</td>
</tr>
<tr>
<td>Office hours:</td>
<td>Please see ecampus for current semester</td>
</tr>
</tbody>
</table>

Course Information

Course title: Introductory Chemistry 1406
Credit hours: 4 credit hours
Class meeting time: campus: MW 9:30-12:20
Course description: CHEM 1406 Introductory Chemistry I (Allied Health emphasis) This is a Texas Common Course Number. This is a survey course introducing chemistry to allied health students. Topics may include inorganic, organic, biochemistry, food/physiological chemistry, environmental/consumer chemistry. Designed for allied health students and for students who are not science majors. Coordinating Board Academic Approval Number 40.0501.51 03 (3 Lec, 3 Lab.)

Course prerequisites: Developmental Mathematics 0305 or Developmental Mathematics 0310 or Developmental Mathematics 0098 or Developmental Mathematics 0099 or the equivalent. Developmental Reading 0093 or English as a Second Language (ESOL) 0044 or have met the Texas Success Initiative (TSI) standard in Reading.
Online Delivery Mode

\textit{Note: Online courses are not easier or less work than courses on campus. In fact, expect to put in more time since you will be figuring out many things on your own, especially in the lab.}

Online courses at Dallas County Community College are delivered via Blackboard. The online section of this class is essentially the same as the onsite section and only for students with excellent time management and organizational skills who are able to take responsibility for their learning process.

\textbf{Since the online student must perform labs at home there is an additional expense of procuring the lab equipment and chemicals. Online students may NOT come to campus to perform labs, there is not space or personnel available to accommodate online students in the campus chemistry labs.}

Required Textbooks and Materials

- **Textbook:** “General, Organic, and Biological Chemistry: An Integrated Approach” 3rd edition by Laura Frost and Todd Deal. Prentice Hall
- **Homework System:** Pearson’s Modified Mastering (titled “MyLab & Mastering” on the website.) Please look under the Homework button in ecampus for this semester’s course name and code. Note: “tba” means “to be announced” and is not the course code.
- **Lab** – Online students must purchase lab supplies. If you choose to take this class online you are incurring additional expenses since you must perform the lab at home. You must buy your own equipment and chemicals as outlined in Appendix B of this Syllabus. Please read Appendix B carefully and thoroughly as all the information for procuring your lab supplies is there. We have done everything possible to keep costs down. Kits from commercial websites are well over $200 and still have to buy many items from your grocery and drug store. The instructions in Appendix B list everything you need and where to get them. The cost is less than $100.
- **Scientific calculator** – these can be purchased anywhere for as little as $10. Make sure the calculator you use can do log functions and exponents.
- **Access to ecampus** – our class website contains many documents and information such as the lab manual, grades and due dates for exams and labs.

\textbf{CHEM 1406 Course Learning Outcomes}

There is an additional Learning Objectives document in ecampus you should print out that is more detailed and helpful for exam study. It is under the Chapter Contents button and is a more detailed list of everything covered in the course chapter by chapter.

1. Perform calculations related to topics included in Chemistry 1406.
   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.
2. Describe the fundamental particles of matter; relate basic laws and theories to their behavior, utilize a systematic method of naming compounds and polyatomic ions.
3. Write and balance different types of chemical equations, and perform molar mass conversions.
4. Define energy and heats of reactions, 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. State the number of valence electrons for the representative elements.

6. Determine the relationship between pressure, volume, moles, and temperature of gases and perform related calculations. Describe the characteristics and behavior of gases, liquids and solids and the intermolecular forces that are involved with these states of matter.

7. State the Octet Rule and predict the charge of an ion. Name and write formulas for compounds.

8. Differentiate between ionic and molecular compounds, and draw Electron Dot structures for atoms. Draw Lewis structures for covalent compounds.

9. Define radioactivity, write nuclear reactions, and perform related calculations with half-lives. Recognize the environmental and medical impact of nuclear radiation.

10. Identify organic families of compounds, distinguish representations of organic compounds. Name organic compounds. Distinguish between conformational, structural and stereo isomers.

11. Identify carbohydrates by their molecular formula and functional groups. Draw Fischer projections of monosaccharides. Distinguish between D and L sugars, alpha and beta anomers. Recognize the source for the different blood types.

12. Define solution, and explain colligative properties and the process of osmosis. Describe the factors affecting solubility and perform calculations with concentration of solutions.


14. Define equilibrium, write equilibrium expressions and perform related calculations, and apply Le Chatelier’s principle. Describe the factors affecting reaction rates.

15. Define acids, bases, and buffers, differentiate between strong and weak acids/bases, and identify conjugate acid/base pairs. Perform pH calculations with acids, bases and buffers.

16. Draw general structure of an amino acid. Recognize the four levels of protein structure.

17. Understand what an enzyme is and how it works.

18. Identify nucleic acids, protein synthesis.

**Course Outline (Calendar)**

Please click on the appropriate button in eCampus for due dates for the

- Exams
- Labs
- Homework

**The following is a check list for the sequence of steps to follow to succeed in this course:**

1. Read the Chapter in the Textbook
2. Read/study the chapter power point found under the Chapter Contents button in ecampus.
3. Complete the chapter QUIZ found under the Chapter Contents button in ecampus (10% of class grade.)
4. Complete the **HOMEWORK on** the MyLab and Mastering website by the due date listed in the website under the "Assignments" tab (10% of class grade.)

5. Complete the scheduled **LAB** work and submit the report by the due date (25% of grade.)

6. Refer to the Learning Objectives found in the Chapter Contents button. Make sure you have mastered these objectives before taking the exam. I suggest printing these out so that as you study you can refer to them. These Learning Objectives will help you be well prepared for the exams.

7. Go to your testing center and take the **EXAM** by the due date. (55% of grade.)

**Means of Assessment (Evaluation) of Course Learning Outcomes**

The Course Learning Outcomes are assessed through departmental exams, quizzes, homework assignments, and lab reports.

**Evaluation Procedures**

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Lab</td>
<td>30%</td>
</tr>
<tr>
<td>Five Exams</td>
<td>50%</td>
</tr>
</tbody>
</table>

**Quizzes – 10%**

There is a quiz in ecampus which will cover the material in each chapter of the textbook. After you read the chapter in the textbook, go through the power point in ecampus, then take the quiz. The power point and quiz will be under the “Chapter Contents” button in ecampus under the Chapter folder. The quizzes are due the same time as the exam due date. That is, they should be completed BEFORE you go to the testing center to take the exam.

**Homework - 10%**

Problems are assigned and graded. The “Homework” button in ecampus has details on how to register and enroll in My Lab and Mastering, and will have the Course name and ID for the current semester.

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.** Due dates and times are in the Mastering website under their “Assignments” tab. Also included in the online assignments are practice problems to help you understand the material. The practice problems are optional.

Your homework grades are posted on the Homework website. Your final homework average for the course will be posted in eCampus at the end of the semester.

**There is no late homework after the final due date that is listed in the homework website. Even if you do homework after this date it will not be counted for credit.**

**Labs – 30%**

*Note: Students cannot pass this course with a failing lab grade.*
This online course uses a “wet” lab experience with actual chemicals and equipment since the American Chemical Society does not recognize virtual or simulated labs as valid lab experience. Online students incur additional expenses since they must procure the chemicals and equipment to perform the lab at home. Appendix B details how to buy this equipment and chemicals. We do not use a “kit” from a national company. Instead we have written and built this lab course at North Lake. This means that it is substantially less expensive than a kit. Even with “kits” you must also procure additional materials to perform labs. The equipment and chemicals you must procure are given in extensive detail in Appendix B. Please procure your lab materials in a timely fashion. **This online course is the same as our on campus course and will require just as much if not more effort to achieve success.**

Lab experiments are due throughout the semester. These experiments will help to reinforce some of the concepts and theories that are studied. Every effort has been made to correlate the lab schedule to topics in the lecture schedule. However, due to the unique scheduling of each semester, these may not coincide exactly. This is not a problem as each lab is self-contained, meaning you can read the lab and understand everything that you need to in order to perform the lab. (In fact there is some pedagogy which claims that students learn concepts better when they are first introduced in the lab.)

Students will follow the experimental procedure outlined in the lab experiment document. All observations, data, and calculations (show work for full credit) should be typed on the Lab Report Sheet. The Report sheet is to be downloaded from the assignment file in the lab folder in ecampus and online students will upload finished reports into ecampus for grading.

The lab grade will be the simple average of all the grades in lab. The lab schedule is in ecampus under the Labs button. The lab reports are to be uploaded into eCampus by **11:30 pm on the specified due dates.** The lab reports that you use are the reports that you will download from the Lab folders under the “Labs” button in ecampus. Late labs will be accepted but they will drop by ten points for each day the reports are late. Labs will be graded within one week of their due date.

**Online Lab Partners**

Online students may find ONE partner through the discussion board or emailing the class. You must email me the name of your lab partner. Partners are encouraged and it will make the lab less expensive and more fun if you have a partner. I encourage communication between partners but each of you must turn in your own unique Lab Report. This means that while your data will be identical, any answers to questions or conclusions will be IN YOUR OWN WORDS. Do not copy each other as this is plagiarism and will be dealt with as Academic Dishonesty. If you and your partner have the same answers this is plagiarism.

**Lab Manual and Materials**

- Lab schedule – under the “Labs” button in ecampus and Syllabus
- Safety Training information – under the “Labs” button in ecampus
- Lab Manual – under the “Labs” button in ecampus. Each lab folder has the Lab which is a word document that introduces and outlines the experimental procedure. You do not have to buy a lab manual for this course – yay!
• Equipment and Chemicals – Online students must refer to Appendix B of Syllabus to procure your lab materials. Campus students do not need anything other than goggles.

Safety Training
Safety training will occur at the beginning of the semester. This is required by law. Safety Training consists of reading the documents in ecampus under the Labs Button. Students must take the Safety Agreement “test” in ecampus or their labs will not be graded.

Lab Grading
Lab grades are an average of all the experiment grades and the safety training quiz.

The following are guidelines for what is considered ACADEMIC DISHONESTY on Lab Reports. (See “Institutional Policies” section below.)

- **No falsification of data.** Do not “fudge” or “tweak” in any way in order to improve your results.
- **Do your own work.** No sharing of data, that is, you may not copy data from someone else or give someone else your data.
- **No plagiarism.** Students must submit their own independent Lab Reports and cannot use someone else’s report as your own. If you work with a partner your data may be the same as your partners but you must answer questions, perform calculations, and write the conclusions on your own. Use your own words. If your answers are too similar to your partner’s you will receive a zero for the lab. A second offense will result in a zero for the course.

If the instructor suspects any dishonesty on the part of the students, those students will receive a zero on the lab report.

Second cheating offenses may result in failure of the class.

Exams – 50%

Students must take the exam at a DCCCD college if they live within 50 miles of a DCCCD campus, or in a supervised testing situation at a testing site mutually agreed upon. There is a survey in ecampus under the “Start Here” button to indicate your testing center preference or if you are using a proctor. You must answer this so that I know where you are testing. 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 testing center.

Students who live out of the Dallas County area may arrange for a proctor using the proctor nomination form found in the Dallas Colleges Online website. Submit the form by the second day of class and email a copy to your instructor. Please write legibly. **Proctors need to be a full time employee of one of the verified institutions listed. The form does not need to be notarized if you are using a testing center at a college or university.**

The five exams will be multiple choice and will be taken on the computer **at the testing center or with your proctor.** Each exam must be taken by the due date under the
“Exams” button. 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 or proctor has put in the password. Exam scores will appear on eCampus immediately upon completion of the exam.

The testing center or proctor will provide a copy of the periodic table and scratch paper. You will need to bring a pen or pencil and your scientific calculator to the testing center along with your picture ID. You may use your own programmable calculator if you agree to have the memory cleared before and after the exam. Some testing centers will provide a calculator.

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 since there are long lines, particularly on Saturdays. If you do not see the exam in your ecampus, do not go to the testing center. Email me and I will load the exam to ecampus.

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. To do so constitutes Academic Dishonesty.

Students are not allowed to leave the Testing Center during a test for any reason. If you choose to leave, you may not return to complete the test. If you need special accommodations you must submit requests to the Disability Services Office in person (A414) or by phone at 972-273-3165. Visit Office of Disability Services at NLC for more information.

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. Exams will be cumulative; however, they will focus on more recent material. 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. Excused absences will only be offered for one of the following reasons: illness, death in family, official University business, or documented emergency.

There will also be some formulas and additional info provided on the exam itself. Please read all the documents under the Exams button to see what will be provided so you will know what formulas or information you do need to know that are not provided. Bring a pen or pencil and your scientific calculator to the testing center along with your government or school issued photo identification. You do not need a programmable calculator. You may use your own programmable calculator (TI 83/84 plus) if you agree to have the memory cleared before and after the exam. The testing center can provide a calculator during your exam if you need it. Fill out the Test Request Form upon arrival at the testing center. Bring a quarter for the coin return lockers if desired. Do not bring personal items such as bags, cell phones or pagers into the testing area. Do not bring children to the testing center.

Know the following information when you request your test:

- Instructor’s name
- Subject, course number, and section number (ex: CHEM 1411 7111)
As you study, be sure to refer to the Learning Objectives for each chapter. These Learning Objectives will help you prepare for the exams.

**Grading Scale**

<table>
<thead>
<tr>
<th>Grades distribution:</th>
<th>Final Grade scale:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five Exams</td>
<td>A = 90-100</td>
</tr>
<tr>
<td>Quizzes in ecampus</td>
<td>B = 80-89</td>
</tr>
<tr>
<td>Online Homework</td>
<td>C = 70-79</td>
</tr>
<tr>
<td>Lab (average must be &gt;59)</td>
<td>D = 60-69</td>
</tr>
<tr>
<td></td>
<td>F = 0-59</td>
</tr>
</tbody>
</table>

To calculate your grade at any time use the formula below. This formula is the same one that I use. Do not ask me to calculate your grade since you can do it as well as me.

Grade = (Exam Avg x 0.50) + (quiz Avg x 0.10) + (Homework Avg x 0.10) + (Lab Avg x 0.30)

Please **do not beg** for grades; earn them.

Please **do not ask for extra credit**. We already have extra credit in the homework as well as bonus questions on each exam. You may take quizzes over to get a better grade. The best way to improve your grade is to work on the homework and quizzes. This will help those averages as well as prepare you better for the exams. I have no idea what extra credit I would give you that would help you to learn the content of this course better than the credit I have already built into the course.

The transparent **earned (merit based) letter grades** in this course are assigned in e-connect as described in the syllabus. In other words, your grade is **commensurate** with your performance in this course. No grades will be **doctoried or altered** (CHANGED) to suit personal needs, educational or career goals.

*If ever you want a professor to reconsider a grade, your arguments must be based on the work you did in the course, not on personal needs, educational or career goals. I am telling you this so that you may know for the future how to make a case if you think you have earned a higher grade in a course than was assigned. An argument based on personal needs, educational or career goals will only serve to antagonize your professors and will be counterproductive to your aim.*

**Financial Aid Certification of Attendance:**

You must attend and participate in your on-campus or online course(s) in order to receive federal financial aid. Your instructor is required by law to validate your attendance in your on-campus or online course in order for you to receive financial aid. You must participate in an academic related activity pertaining to the course such as but not limited to the following examples:

- initiating contact with your instructor to ask a question about the academic subject studied in the course;
• submitting an academic assignment;
• taking an exam;
• completing an interactive tutorial;
• participating in computer-assisted instruction;
• attending a study group that is assigned by the instructor;
• or participating in an online discussion about academic matters relating to the course.

In an online class, simply logging in is not sufficient by itself to demonstrate academic attendance. You must demonstrate that you are participating in your online class and are engaged in an academically related activity such as in the examples described above.

Attendance
For online classes most of the work will be done remotely via Blackboard and an online homework system. Students are expected to log in almost daily. You must log in and complete the Safety Test (quiz) by the “certification day” (10th class day during a normal length semester, 5th class day during a 5 week summer semester) in order to receive financial aid.

Discussion Board
Discussion Board is where you can post any questions you may have concerning the material, labs, or homework. I invite students to use the Discussion Board to introduce themselves to the class and me. The Discussion Board is NOT required but I encourage you to use it to connect with the other students in the class. Online learning can be very isolated and it is quite helpful to ask questions of general interest. Often I will post questions from students on the discussion board. Please look here first before emailing me a question. The answer may be already posted on the Discussion Board. 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.

Email
Email is the best way to communicate with the instructor. Include the course and section number in the subject line. For example: CHEM 1406 71426. Please see that your email address is correct in eCampus. Please allow a 24 hour turnaround time to answer emails. I reserve the right to not answer emails on Sundays. If you do not include the course number in the subject line of your email do not expect an answer.

Science Tutoring Center
The Science Center provides student services in the following subjects (majors and non-majors): Biology, Botany, Microbiology, Anatomy and Physiology, Chemistry, Geology, Physics, Nutrition and Ecology. The center is located in P-333 and offers various resources all of which are free to the students. 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. In order to access resources of the SLC a North Lake College ID Card is required.
Students sign in and out. This data helps us keep the center stocked, running, and most of all, free of charge!

**Hours of operation:**
Spring/Fall semester: M - R 9 am to 7 pm, F & Sa 9 am – 3 pm
Maymester and Wintermester: M – R 2pm – 6 pm
Summer I & II: M – R 2 pm – 7 pm

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

**Institutional Policies relating to this course can be accessed from the following link**
[**NLC policies and links**](#)

**State-Outcomes Core Curriculum**
As part of the core, this course contributes to the development of six 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.

**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

*CHEM 1406 reinforces Program Level Outcome 1 with written and visual communications, Program Level Outcomes 2, 3, and 4.*

**Learning Activities, Outcomes, and Assessment**
The following table shows how the Course Outcomes reflect the State Outcomes and are incorporated and assessed in this course.

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>CLASSIFYING MATTER</strong></td>
<td></td>
</tr>
<tr>
<td>Student Learning Outcomes</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td></td>
</tr>
<tr>
<td>1. Students will classify matter as pure substance (element vs. compound) or mixture (homogeneous vs. heterogeneous) with 70% proficiency on departmental exams.</td>
<td></td>
</tr>
<tr>
<td>Core CT, No ACGM</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>NAMING STRUCTURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Students will determine the names of structures of alkanes, cis/trans cycloalkanes, and haloalkanes using the IUPAC rules with 70% proficiency on departmental exams.</td>
</tr>
<tr>
<td>Core VC, No ACGM</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>BOND POLARITY</th>
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<tbody>
<tr>
<td>3. Students will use electronegativity to determine the polarity of a covalent bond at 70% proficiency on departmental exams.</td>
</tr>
<tr>
<td>Core CT and EQS, No ACGM</td>
</tr>
</tbody>
</table>
Appendix A: Schedules

Last day to withdraw can be found on NLC website under “Catalogues and Schedules”
Click on the “Academic Calendar” link

Lab Schedule can be found in ecampus under Labs button and through this link: chem1406 lab schedule

Homework due dates are in the Pearson homework website.

Exam due dates are under exams button in ecampus.

<table>
<thead>
<tr>
<th>Exam</th>
<th>Chapters</th>
<th>Exams and Quizzes Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,2</td>
<td>Week 2</td>
</tr>
<tr>
<td>2</td>
<td>3,4</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>5,6,7</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>8,9</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>10,11</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Chapter Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chemistry Basics</td>
</tr>
<tr>
<td>2</td>
<td>Atoms and Radioactivity</td>
</tr>
<tr>
<td>3</td>
<td>Compounds</td>
</tr>
<tr>
<td>4</td>
<td>Intro to Organic Compounds</td>
</tr>
<tr>
<td>5</td>
<td>Chemical Reactions</td>
</tr>
<tr>
<td>6</td>
<td>Carbohydrates</td>
</tr>
<tr>
<td>7</td>
<td>State Changes, Solubility and Lipids</td>
</tr>
<tr>
<td>8</td>
<td>Solution Chemistry</td>
</tr>
<tr>
<td>9</td>
<td>Acids, Bases and Buffers</td>
</tr>
<tr>
<td>10</td>
<td>Proteins</td>
</tr>
<tr>
<td>11</td>
<td>Nucleic Acids</td>
</tr>
</tbody>
</table>
CHEMISTRY 1406 LAB SCHEDULE

A more detailed schedule with the due dates is given in ecampus.

<table>
<thead>
<tr>
<th>Lab Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read Syllabus</td>
</tr>
<tr>
<td>Lab Introduction — read document in ecampus</td>
</tr>
<tr>
<td>Safety Training — read documents in ecampus</td>
</tr>
<tr>
<td>Measurement and Significant Figures (Ch1)</td>
</tr>
<tr>
<td>Chemical Nomenclature (Chap 4)</td>
</tr>
<tr>
<td>Separation of a Mixture (Ch1)</td>
</tr>
<tr>
<td>Stereochemistry I and II (Chap 4)</td>
</tr>
<tr>
<td>Saponification (Ch 7)</td>
</tr>
<tr>
<td>Chromatography of dyes</td>
</tr>
<tr>
<td>Colligative Properties (Ch 8)</td>
</tr>
<tr>
<td>Solutions, Electrolytes, and Concentration (Ch 8)</td>
</tr>
<tr>
<td>Isolation of Casein (Ch 9)</td>
</tr>
<tr>
<td>Enzymes (Ch 10)</td>
</tr>
</tbody>
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Appendix B: Online CHEM 1406 Lab Materials Requirements

Below is a list of supplies needed for your CHEM 1406 online lab. Order these as soon as possible from the websites listed. You may choose to work with ONE partner which will reduce the expense of your lab as well as make the lab more fun. One set of supplies is sufficient per lab group of two.

If you work with a partner please be aware that you are required to submit your own original lab report. Your data and your partner’s data will be the same but you must answer any questions in your own words. (Otherwise it is plagiarism.) Please inform me of who your partner is. (See Academic Dishonesty above.)

The supplies listed in #1, #2 and #3 cannot be bought from the bookstore, Home Depot, Wal-Mart or any other store I know of. They are chemicals and must be shipped ground so order today. The supplies listed in #4 can be bought at grocery or drug stores.

1. **Order North Lake College Chemistry 1406 Kit, SK-NLC1406**, ~$80 from the following website:
   - Kit details are at the end of this Appendix B.

2. **Order a Balance**, ~$10 from the following website: [Order Scale](#)

3. **Procure the “NLC Supplemental Lab Kit”** - In addition to the above equipment, you need an additional “Supplemental Kit” which NLC will provide. *NLC is the only place you can get this supplemental kit.* In order to receive the NLC kit do one of the following:
   - Come to North Lake at your convenience and pick up a kit that will be pinned outside my office.
   - **OR**
   - Mail a legal sized SASE (self-addressed stamped envelope) with three postage stamps to

     Cynthia Simmons, Chem 1406
     North Lake College
     5001 N. MacArthur Blvd.
     Irving, TX 75038

   This additional kit will contain:
   1. **Metal cylinder** – approximately 1/4 inch diameter by 1 inch length.
   2. **Unknown** liquid (for density determination in Measurement Lab.)
   3. **Shrinky dink rectangle**
   4. **Ziploc bag** containing 2g unknown mixture sample for Sep.of Mix Lab
   5. **plastic weighing boat**
   6. **cheesecloth**
   7. **Whatman No. 1 filter paper**
The contents of the kit are pictured below. The contents fit into a sandwich baggie and can be mailed in a normal sized envelope.

5. **Procure the following materials** – This is a list of materials that are also needed to perform these labs. The chemicals and materials on this list are available at grocery stores, drug stores, hardware stores, etc. You very likely already have many of these in your home and kitchen.

- Ruler
- hot pads
- brown paper bag
- cookie sheet
- graph paper
- magnet (a refrigerator magnet will suffice)
- table salt (NaCl)
- olive oil
- ice cube molds
- distilled water
- table sugar
- celery – one stalk
- ammonia
- vinegar (5% solution of acetic acid, H\textsubscript{2}C\textsubscript{2}H\textsubscript{3}O\textsubscript{2})
- rubbing or isopropyl alcohol (C\textsubscript{3}H\textsubscript{7}OH)
- nonfat milk
- rubber bands
- egg white or other food
- pencil
- ripe banana
- Resealable zip-top bag
- Dishwashing soap or detergent
- coffee filter
- sink or large pot for large water bath
- ice
- colored markers
- hydrogen peroxide, H\textsubscript{2}O\textsubscript{2}
- raw chicken/turkey livers/yeast
- knife
- cutting board
- large plate
- microwave safe bowl & cover
- microwave oven (if you do not have a microwave you can use a conventional oven.)

At the end of the semester please consider donating any left-over supplies or chemicals that you no longer need or want. We will put them to good use.
**North Lake College Chemistry 1406 Kit, SK-NLC1406**

**Kit Contents**

- 250 & 600 ml glass beakers
- 250 ml Erlenmeyer flask
- Wickless alcohol lamp and stand *(you'll need to provide denatured alcohol as fuel)*
- 10 ml polypropylene graduated cylinder
- 100 ml polypropylene graduated cylinder
- 4 Test tubes, large 16x150 mm
- Test tube stand
- Test tube clamp
- 12" thermometer
- Funnel, plastic, 65 mm dia.

- Tubing pinch clamp
- Tube, 2 pack, 5 mm glass, 3" long
- Tubing, 4.8 mm vinyl, 2' long
- Rubber stopper, #6.5, 2-hole
- Rubber stopper, #0, 1-hole
- pH papers
- Pipet (medicine dropper)
- Stirring rod, glass, 6" long
- Copper II sulfate, CuSO₄, 30g
- Sodium hydroxide, NaOH, 30g
- Ethyl alcohol, 95%, 30mL
- Calcium chloride, CaCl₂, 30g
- Molecular Model Set, Student