Course Syllabus
General Chemistry 1412
Spring 2017

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 1412. 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 hrs: MW 4:00 – 5:00 PM
TR 12:30 – 2:00 PM

Course Information
Course title: General Chemistry 1412 Sections 73201
Credit hours: 4 credit hours
Class meeting time: Lecture, MW 9:30 AM – 12:20 PM Lab MW 1:00 – 3:50 PM
Course description: This course is for science and science-related majors. It is a continuation of Chemistry 1411. Topics include chemical equilibrium; phase diagrams and spectrometry; intermolecular interactions; acid-base concepts; buffers; colligative properties of solutions; thermodynamics; kinetics; electrochemistry; nuclear chemistry. Topics may further include transition-metal chemistry, an introduction to organic chemistry and qualitative inorganic analysis. Basic laboratory experiments support theoretical principles presented in CHEM 1412; introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports.
Course prerequisites: Chemistry 1411. Developmental Reading 0093 or English as a Second Language (ESOL) 0044 or have met the Texas Success Initiative (TSI) standard in Reading.

Required or Recommended Textbooks and Materials
• Mastering Chemistry Access Code (Instructions on eCampus)
• Lab Experiments (on eCampus)
• Scientific calculator (Examples TI-30-IIs, 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 further study in Chemistry.

Specific Course Learning Outcomes

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

1. State the characteristics of liquids and solids, including phase diagrams and spectrometry. Interpret heating curves. Recognize the three cubic unit cells and perform related calculations.
2. Articulate the importance of intermolecular interactions and predict trends in physical properties. Explain the solution process and the factors that affect solubility; compute solution concentrations. Describe the colligative properties; perform related calculations.
3. Identify the characteristics of acids, bases, and salts, and solve problems based on their quantitative relationships. Compare the relative strengths and definitions of acids and bases, both weak and strong. Describe buffers and explain how they work; compute the pH of buffers including those with acid base titrations
4. Identify and balance oxidation-reduction equations, and solve redox titration problems.
5. Determine the rate of a reaction and its dependence on concentration, time, and temperature. Determine the mathematical expression of the rates, leading to the concept of reaction mechanisms. Perform integrated rate law calculations
6. Apply the principles of equilibrium to aqueous systems using LeChatelier’s Principle to predict the effects of concentration, pressure, and temperature changes on equilibrium mixtures. Determine equilibrium expressions and perform calculations with equilibrium reactions including those with acids, bases, and slightly soluble salts.
7. Analyze and perform calculations with the thermodynamic functions, enthalpy, entropy, and free energy.
8. Discuss the construction and operation of galvanic and electrolytic electrochemical cells, and determine standard and non-standard cell potentials. Explain the basic concepts of electrochemistry and balance redox reactions. Perform related calculations
9. Define nuclear decay processes. Explain the basic concepts of nuclear chemistry including nuclear reactions, energy production, the uses of radioisotopes, and radiation in the environment and living systems; perform related calculations.
10. Describe basic principles of organic chemistry and descriptive inorganic chemistry. Perform qualitative analysis of ions.
11. Use basic apparatus and apply experimental methodologies used in the chemistry laboratory.
12. Demonstrate safe and proper handling of laboratory equipment and chemicals.
13. Conduct basic laboratory experiments with proper laboratory techniques.
14. Make careful and accurate experimental observations.
15. Relate physical observations and measurements to theoretical principles.
16. Interpret laboratory results and experimental data, and reach logical conclusions.
17. Record experimental work completely and accurately in laboratory notebooks and communicate experimental results clearly in written reports.
18. Design fundamental experiments involving principles of chemistry and chemical instrumentation.
19. Identify appropriate sources of information for conducting laboratory experiments involving principles of chemistry.

**Course Outline**

Please see Appendix A of 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, online HW system (Mastering Chemistry) and written lab reports.

**Evaluation Procedures**

Homework problems are assigned and graded. You will be using Mastering Chemistry, an online tutorial and homework program. You can go directly to the Mastering Chemistry web site without going through eCampus by going to [http://www.masteringchemistry.com/site](http://www.masteringchemistry.com/site).

Many of the problems in Mastering Chemistry come from the textbook and some of them have answers. You can check the answers in the back of the book to help you figure out the problems. Students are strongly encouraged to complete the assignments in preparation for the tests. **Late homework will only worth 50% of the total points so be sure to do the homework on time. Be sure to check the due dates frequently.** Also included in the Mastering Chemistry assignments are practice problems to help you understand the material. The practice problems are optional. Details on how to register and enroll in our course on Mastering Chemistry can be found under the Assignments button in eCampus.

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

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**
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 Participations 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 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 Learning Center
The Science Learning Center (SLC) 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 SLC 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. 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 SLC 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 Turley
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.

1) The Vice-President of Academic & Student Affairs may initiate disciplinary proceedings against a student accused of academic dishonesty.

2) Academic dishonesty includes, but is not limited to, cheating on a test, plagiarism and collusion.

3) Cheating on a test includes:
   a) Copying from another student’s test paper;
   b) Using, during a test, materials not authorized by the person giving the test;
   c) Collaborating with another student during a test without permission to do so;
   d) Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of an un-administered test.
   e) Substituting for another student, or permitting another student to substitute for you to take a test; and
   f) Bribing another person to obtain an unadministered test or information about an unadministered test.

4) “Plagiarism” means the appropriation of another’s work (ideas and/or words) and the unacknowledged incorporation of that work in one’s written work offered for credit. Quotes not identified as quotes constitute a form of plagiarism even if the borrowed ideas are documented.

5) “Collusion” means an unauthorized collaboration with another person in preparing written work offered for credit.

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.

The Office of Institutional Equity, in coordination with DCCCD colleges, has the primary responsibility for reviewing, updating and implementing compliance policies and procedures. The Institutional Equity and Compliance Officer and the Office of Institutional Equity will ensure compliance with College District policies, federal and state laws related to sexual assault,
Title IX, Title II (Americans with Disabilities Act) and the Military Veterans Full Employment Act to support diversity and inclusion.

**Students with Disabilities:**
If you are a student with a disability and/or special needs, or if you think you may have a disability, please contact the college Disability Services Office (DSO). Please note that all communication with DSO is confidential. If you are eligible for accommodations, please provide or request that the DSO send your accommodation letter to me as soon as possible (students are encouraged to contact DSO at the beginning of the semester). For more information regarding the College Disability Services Office, please visit the Student Services website: dcccd.edu/DSO Offices or contact DCCCD Office of Institutional Equity at (214) 378-1633.

North Lake College Disability Services Office: A414, 972-273-3165

**A Note on Harassment, Discrimination and Sexual Misconduct**
We are committed to assure all community members learn and work in a welcoming and inclusive environment. Title VII, Title IX and DCCCD policy prohibit harassment, discrimination and sexual misconduct. If you encounter harassment, sexual misconduct (sexual harassment, sexual assault, stalking, relationship violence, stalking), retaliation or discrimination based on race, color, religion, age, national origin, disability, sex, sexual orientation, gender identity, and/or gender expression, please contact your College Title IX Coordinator or the Office of Institutional Equity. We treat this information with the greatest degree of confidentiality possible while also ensuring student welfare and college safety.

We are concerned about the well-being and development of our students, and are available to discuss any concerns. There are both confidential and non-confidential resources and reporting options available to you. If students wish to keep the information confidential, please contact the college Counseling or Student Health Services. As required by DCCCD policy, incidents of discrimination and/or sexual misconduct shared with faculty will be reported to the College Title IX Coordinator or District Title IX Coordinator. The Title IX Coordinator will contact the student and determine if further investigation is needed. For more information about policies, resources or reporting options, please contact your college Title IX Coordinator or visit www.dcccd.edu/titleIX.

North Lake College Title IX Coordinator: Rosemary Meredith (acting), TitleIX-NLC@dcccd.edu, 972-860-3992

District Title IX Coordinator: Office of Institutional Equity, LaShawn Grant, TitleIX-District@dcccd.edu, 214-378-1633

**ADMINISTRATIVE WITHDRAWAL**
Students with valid extenuating circumstances may be eligible for an administrative withdrawal by the Dean of the Division in which the course or courses are taught. An administrative withdrawal will not be awarded to students who simply fail to withdraw prior to the last day to receive a “W.” The request for an administrative withdrawal must be made in writing to the Dean of the Division with any supporting documentation attached. This must occur before the last official day of the semester.

**DROP POLICY**
If you are unable to complete this course, you must officially withdraw by **Saturday, April 29, 2017**. Withdrawing is a formal procedure which you must initiate; your instructor cannot do it for you. 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: http://www.DCCCD.edu/thirdcourseattempt.

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. For more information, you may access: https://www1.dcccd.edu/coursedrops

FINANCIAL AID STATEMENT
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. 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: http://www.fafsa.ed.gov

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**

1. **Learning Activity:**
   a. **Learning Outcomes:** Students will derive the rate law for a reaction given the experimental rate data with 70% proficiency on departmental exams.
   b. **Assessment:** Students will discuss their answers in class and the assessment is the question on the departmental exam.
   c. **Program Level Outcomes 2 and 3, Specific Course Outcome 5**

2. **Learning Activity:** Students will form pairs to work in the lab to perform the experiment with the Cobalt (II) Chloride system.
   a. **Learning Outcomes:** Students will write an explanation of their observation when adding more of a reactant to the Cobalt (II) Chloride system using Le Chatelier’s principle with a 70% proficiency.
   b. **Assessment:** The students will be able to produce effective communication to express their ideas in the lab report.
   c. **Program Level Outcome 1.1, Specific Course Outcomes 6, 13, 14, 15 and 17**

3. **Learning Activity:**
   a. **Learning Outcomes:** Given the molecular structures of various compounds, students will determine which structures exhibit hydrogen bonding with a 70% proficiency on departmental exams.
   b. **Assessment:** Students will discuss their answers in class and the assessment is the question on the departmental exam.
   c. **Program Level Outcomes 1.3, Specific Course Outcomes 2**
## APPENDIX A

<table>
<thead>
<tr>
<th>Week #</th>
<th>Monday</th>
<th>Wednesday</th>
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<tbody>
<tr>
<td>1</td>
<td>Lecture</td>
<td>3/20 – Chapter 11</td>
</tr>
<tr>
<td></td>
<td>Lab</td>
<td>Lab Intro: Safety Training (for new students)</td>
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<tr>
<td>2</td>
<td>Lecture</td>
<td>3/27 – Chapter 13/14</td>
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<tr>
<td></td>
<td>Lab</td>
<td>Supersaturated Sodium Acetate Solution</td>
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<tr>
<td>3</td>
<td>Lecture</td>
<td>4/3 – Chapter 14/15</td>
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<tr>
<td></td>
<td>Lab</td>
<td>Colorimetric Analysis</td>
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<tr>
<td>4</td>
<td>Lecture</td>
<td>4/10 – Chapter 16</td>
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<tr>
<td></td>
<td>Lab</td>
<td>Systems at Equilibrium</td>
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<tr>
<td>5</td>
<td>Lecture</td>
<td>4/17 – Chapter 17</td>
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<tr>
<td></td>
<td>Lab</td>
<td>Qualitative Analysis (Unknowns)</td>
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<tr>
<td>6</td>
<td>Lecture</td>
<td>4/24 – Chapter 19</td>
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<td></td>
<td>Lab</td>
<td>Determination Ksp of KHT</td>
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<tr>
<td>7</td>
<td>Lecture</td>
<td>5/1 – Chapter 20/21</td>
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<tr>
<td></td>
<td>Lab</td>
<td>Voltaic Cells</td>
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<tr>
<td>8</td>
<td>Lecture</td>
<td>5/8 – Chapter 21 (if necessary)</td>
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<tr>
<td></td>
<td>Lab</td>
<td>Optional Lab Final</td>
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</tbody>
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**Important dates to remember:**

- **Census Date:** Mar. 25
- **Last Drop Day:** Apr. 29
- **Dept Exam 1:** Mar. 30 – Apr. 4 (Ch 11[12], 13)
- **Dept Exam 2:** Apr. 6 – 11 (Ch 14 – 15)
- **Dept Exam 3:** Apr. 20 – 25 (Ch 16 – 17.3)
- **Dept Exam 4:** Apr. 27 – May 2 (Ch 17.4 – 17.6, 19)
- **Dept Exam 5:** May 4 – 9 (Ch 20 – 21)
- **Dept Final Exam:** May 10 (9:30 AM – 11:20 AM) (Optional Cumulative Final Exam replaces low exam grade)