



# CAMPBELLVILLE UNIVERSITY

## COURSE SYLLABUS

PLEASE TYPE.

DATE 20 August 2015

ACADEMIC UNIT Natural Science Division FACULTY Elizabeth K. Sutton

Discipline	Course # Section	Title of Course	Credit Hours	Cross Reference (if applicable)
CHE	321-01	Analytical Chemistry	4	n / a

TEXTBOOK [ X ] Required [ ] Not Required

Author Skoog, West, Holler, Crouch Title "Fundamentals of Analytical Chemistry", 9<sup>th</sup> ed.

Publisher Brooks/Cole-Thomson Learning Date of Publication 2014

WORKBOOK [ ] Required [ ] Not Required

Author \_\_\_\_\_ Title \_\_\_\_\_

Publisher \_\_\_\_\_ Date of Publication \_\_\_\_\_

PLEASE ANSWER THE FOLLOWING QUESTIONS ON A SEPARATE SHEET OF PAPER AND ATTACH TO THIS FORM.

- DESCRIPTION OF COURSE: Develop a brief description of the course as it will appear in the Catalog.
- STUDENT LEARNING OBJECTIVES: List the student learning objectives for the course. Please relate these objectives to the mission and goals of the University and the Academic Unit. For general education courses, please indicate which student learning objectives address general education goals and the intended method of assessment. A minimum of four of the seven general education goals must be included.  
  
*Example: Students will demonstrate their ability to compare and contrast two types of basket weaving. (Goal: Oral and Written Communication; Evidence: research paper and class presentation)*
- COURSE OUTLINE: Outline the topics/units that are to be taught.
- EVALUATION: How do you plan to determine the grade in the course? Please include grading scale.
- REQUIREMENTS:
  - Examinations: State when tests are to be administered, including unit, mid-term, and final examinations.
  - Reports: How many, length required, and what type (Oral, term and/or research, book critiques).
  - Supplemental reading assignments or outside work required.
  - Supplemental instruction aids: Audio visual aids, field trips, guest speakers, etc.
- BOOKLIST

DEAN

Date Copy Received \_\_\_\_\_

VICE PRESIDENT FOR ACADEMIC AFFAIRS

Date Copy Received \_\_\_\_\_



- I. **TITLE:** CHE 321 Analytical Chemistry, four credit hours
- II. **COURSE DESCRIPTION:** This course is designed to provide the student with a background in the basic chemical principles which are essential to understanding analytical or quantitative chemistry. In addition, the student should develop the ability to determine acceptable accuracy and precision values for experimental data and various techniques used in analytical chemistry. Topics to be discussed include gravimetric analysis, volumetric analysis, neutralization theory, oxidation-reduction theory and absorption spectroscopy. **Three lecture hours per week. Prerequisites:** CHE 112, 114 with a grade of "C" or better. **CHE 321L must be taken concurrently.**
- III. **COURSE OBJECTIVES**
- A. **General Education Curriculum Objectives (GECO):** (numbered to correspond to the objectives listed in the University catalog.)
2. Critical Thinking: Students will demonstrate the ability to reflect on theories and issues in a systematic fashion.
  4. Ethics: Students will demonstrate an understanding of Christian values and ethical standards in order to make mature and informed decisions concerning moral issues.
  5. Oral and Written Communication: Students will demonstrate the ability to express ideas, beliefs, and information in an organized, precise, and persuasive manner.
  6. Quantitative Literacy: Students will demonstrate the ability to understand and utilize mathematical and/or logical relationships to analyze data, to construct and assess arguments, and to make sound judgments in quantitative situations that arise in daily life.
  7. Social Responsibility and Citizenship: Students will demonstrate an understanding of personal and social responsibility in a changing global environment so that students can make contributions to their respective discipline and to society as a whole.
- B. **Student Learning Outcomes (SLO):** Students will demonstrate the following learning outcomes in this course. (Numbered to correspond to the pertinent General Education Curriculum Objective [GECO]).
1. Students will understand and be able to explain the basic principles of analytical chemistry. (GECO 2, 6; Evidence: homework, quizzes, exams)
  2. Students will execute calculations related to quantitative aspects in analytical chemistry. (GECO 2, 6; Evidence: homework, quizzes, exams)
  3. The student will recognize how chemistry provides solutions to contemporary, historical, technological, and societal issues. (GECO 2, 4, 6, 7; Evidence: homework, exams, term project)
  4. Students will follow ethical practices when conducting research, writing reports, using sources and when working with others. (GECO 4; Evidence: exams, term project)
  5. Students will develop an awareness of how a basic understanding of chemistry, the proper application of that knowledge, and the interaction between chemistry and other fields of study and careers is important to personal and social issues. (GECO 4, 6, 7; Evidence: exams, term project)
  6. Students should be able to read, understand, and apply scientific information through thinking more critically, discussing more meaningfully, arguing more persuasively, and writing more effectively. (GECO 2,5; Evidence: homework, quizzes, exams, term project)
- C. **Program Learning Outcomes (PLO):** (numbered to correspond to the listing in the program assessment document)
1. The student will be able to demonstrate a solid understanding of the core principles in the traditional subdivisions of chemistry: Analytical, Inorganic, Organic, and Physical.
  3. The student will be able to conduct a thorough literature search, interpret, and utilize scientific literature from various sources including libraries, the internet, and electronic databases.
  4. The student will be able to articulate chemical information/data/ideas clearly and effectively in speech and in writing in an acceptable presentation format.

6. The student will demonstrate critical thinking skills in chemistry: interpretation, evaluation, explanation, and scientific inquiry; how to ask appropriate questions, gather relevant information effectively and creatively, and reason logically from this information to make reliable conclusions.
- D. **Course Specific Objectives (CSO):** The student is expected to recognize and apply the fundamental and practical aspects of the following concepts and apply the concepts to problem solving: (numbered to correspond to the pertinent program learning outcome [PLO])
1. units of measure, unit conversions, density, and definitions of matter (PLO 1)
  2. introduction to the analysis of real samples and the difficulties involved in handling real samples such as sampling, preparation, decomposition, dissolution, and the elimination of interferences (PLO 1)
  3. principles of experimental error in chemical analysis including the sources of experimental errors and the application of statistics to data treatment and evaluation using spreadsheets (PLO 1, 4, 6)
  4. concept of gravimetric analysis including experimental aspects of this type of analysis and the use of gravimetric factor in calculations (PLO 1, 6)
  5. principles of titrimetric methods of analysis, with emphasis on dilution of solutions, the theory of neutralization, titration curves for complex acid/base systems, precipitation titrimetry, oxidation/reduction titrations, potentiometric titrations, and complex-formation titrations (PLO 1, 6)
  6. properties of aqueous solutions, including activity of ions, application of the Debye-Huckel equation to thermodynamic equilibrium constant (PLO 1, 6)
  7. concept of equilibrium as it applies to complex systems and chemical analysis (PLO 1, 6)
  8. principles of electrochemistry including standard electrode potentials, the Nernst equation, and the theory of potentiometry (PLO 1, 3, 6)
  9. basic principles of spectrochemical methods of analysis, with emphasis on ultraviolet and visible absorption spectroscopy, atomic absorption spectroscopy, and the application of Beer's Law in problem solving and analysis (PLO 1, 3, 6)
  10. basic principles of separation methods used in analytical chemistry (PLO 1, 6)

#### IV. COURSE OUTLINE:

- A. The Analysis Process
- B. Evaluation of Analytical Results
- C. Chemical Calculations
- D. Equilibrium Constant Calculations
- E. Principles of Gravimetric Methods
- F. Principles of Volumetric Methods
- G. Precipitation Titrations
- H. Acid-Base Titrations
- I. Complexation Titrations
- J. Oxidation-Reduction Titrations
- K. Principles of Spectrochemical Analysis
- L. Introduction to Electrochemistry

#### V. COURSE EVALUATION:

##### A. Instructional Strategies:

1. Students will learn science by doing science, in this course the science focus is on chemistry. Lecture provides the intellectual theory and conceptual understanding of chemistry, and the lab will apply that intellectual understanding.
2. Writing Component: This course will promote student learning by emphasizing writing skills. There will be several writing requirements. These requirements may include a term paper, article critiques, journals, portfolios, or other writing assignments.
3. Critical Thinking, Problem Solving, and Reasoning Skills will be reinforced throughout the study of chemistry and its applications in this course.

##### B. Numbers to Remember:

1. **Campus Security Cell Phone: 270-403-3611**
2. **Campus Security Office Phone: 270-789-5555**
3. **Natural Science Division Office Phone: 270-789-5065**

C. The evaluation for this course will be distributed as follows:

Hourly Exams (3 @ 100 pts)	300 pts	1296-1440 pts	A
Quizzes, In-Class Activities, Weekly Summaries	100 pts	1152-1295 pts	B
Graded Homework Assignments	120 pts	1008-1151 pts	C
Final Exam (comprehensive)	200 pts	864-1007 pts	D
Lab Component	720 pts	Below 864 pts	F
<b>TOTAL</b>	<b>1440 pts</b>		
<ul style="list-style-type: none"> <li>Any student who does not obtain at least 50% of the lecture components (homework/quizzes, hourly exams and final) will fail the course.</li> <li>If, for any reason, you cannot continue to attend this class, be certain you <b>DROP IT OFFICIALLY</b>. Otherwise you will automatically receive a failing grade.</li> </ul>			
<b>Dates to Remember:</b>			
Evening Classes begin	Aug 24	Fall Break	Oct 15-16
Day Classes start	Aug 25	2 <sup>nd</sup> bi-term begins	Oct 19
Last day add /register	Aug 28	Last day to drop a semester class with "W"	Nov 13
Labor Day Holiday--No Class	Sep 7	Thanksgiving Break	Nov 25- 27
Last Day to Drop 1 <sup>st</sup> bi-term class with "W"	Oct 2	Finals Week	Dec 7-11

## VI. COURSE REQUIREMENTS:

- A. **Examinations:** Three hourly exams (100 points each) will be given throughout the semester, with exam dates indicated on the syllabus and being announced in class approximately a week in advance. A COMPREHENSIVE two-hour final valued at 150-200 points will be given at the end of the semester according to the exam schedule furnished by the Academic Dean's office. **No make-up exams will be given.** If an exam is missed throughout the semester, the value of the final exam will increase in proportion to the number of exams missed. However, the maximum number of hourly exams, which may be missed, is two. (The final exam may not be missed.) Cases of prolonged absence, severe illness, or death in the immediate family will be handled on an individual basis.
- Students will be administered the American Chemical Society (ACS) standardized exam during the final week of class to aid in the assessment of the chemistry program. Every student who completes Analytical Chemistry is required to take this exam. The exam will be 50 multiple choice questions to be taken in 100 minutes. If your score on the ACS exam exceeds certain thresholds, you will receive bonus points added to your final exam score. Details will be provided in class early in the semester. Thus, the ACS exam can only help a student's grade and you are encouraged to strive for perfection on this exam. The following is a breakdown of topics to aid you in preparing for the exam:
1. Experimental design and data acquisition: Accuracy and precision, random and systematic error, standard deviation, confidence limits, calibration, detection limits, sensitivity, and significant figures.
  2. Homogeneous equilibria: Acid-base equilibria and titrations, redox reactions and titrations, electrochemical cells, and complexometric titrations.
  3. Heterogeneous equilibria: Gravimetric analysis, solubility, and chemical separations.
  4. Solutions: Concentration terms, ionic strength and activity, standardizations, and primary standards.
  5. Instrumental methods: Beer's law, spectroscopic methods, chromatographic methods, radiochemical methods, electrolysis, and potentiometry, and lasers.
- B. **Quizzes, In-Class Activities and Weekly Summaries:** Throughout the semester, UNANNOUNCED quizzes and in-class activities will be given to test your knowledge of the various topics being discussed. It is to your advantage, as a student, to look over and work problems that occur at the end of the chapters to be certain that you have an understanding of the material covered in the given chapter. These activities will be given at the beginning and the end

of class, therefore be sure that you are on time for class.

Periodically during the semester you will be required to write and turn in one-page (typewritten, double-spaced, 1" margins, Times New Roman 12 pt. font) summaries of the week's lecture topics. The summaries are due at the BEGINNING of the following class period. More details will be given the first week of class.

At the end of the semester your lowest quiz score and lecture summary will be dropped. The remaining quizzes, activities and summaries will be averaged and scaled to 100 points for final grade computation. **NO MAKE-UP QUIZZES OR ACTIVITIES will be given. NO LATE SUMMARIES will be accepted.** If you miss a quiz, activity, or summary a grade of zero will be recorded. Quiz dates will be unannounced.

- C. **Calculator:** A scientific calculator *with an equation solver* is required. I recommend a Texas Instruments model TI-83 or higher.
- D. **Online Homework:** Homework will be assigned for each chapter. Students are required to complete online homework assignments. Students are required to purchase access to the course homework page from WebAssign and complete online homework assignments. The online homework site is <http://www.webassign.net>. The class key for this course will be given in class. The online access card/code is purchased from the website and costs \$40.19 for one semester of access. Each assignment will be available only during a specified period. You may use your textbook, your notes, a calculator, and scratch paper when working on the online homework assignments, but you MAY NOT receive any help or give any help to anyone completing an online homework assignment. It is recommended that the chapter homework assignments be taken as soon as possible after the chapter has been covered in class. All homework assignments must be completed by the deadlines set by the instructor. Any homework assignment not completed by the deadline will be recorded as a zero. At the end of the semester, your lowest online homework assignment score will be dropped and the remaining scores will be averaged for your homework grade. More details about the online homework assignments will be given in class.
- E. **Practice Homework:** A series of suggested homework problems is given on the course schedule. These homework problems from the text will not be collected or graded, however many quiz and exam questions may be based upon these recommended problems. It is recommended that each student purchase and **USE A BOUND, PAGE-NUMBERED NOTEBOOK** to record these suggested homework problem solutions. The first two pages of the notebook must be left blank initially, and used only to record a table of contents that states the page number on which the homework for each chapter begins. Homework is the single most crucial part of the learning process in this class, so quizzes will usually include problems to solve that are related to current or past homework assignments. "To help you succeed in chemistry, some study/learning tips are provided below.
1. Read the entire chapter, and focus on theory. Do not stop and do any problems at this point. This should be regarded as an initial read through, and should be completed **before** the instructor lectures on the material.
  2. Reread chapter & follow each of the worked out sample problems within the chapter (review all of them).
  3. Work the end-of-chapter problems listed in the course schedule. Do not look at the answers in the back of the book until you have calculated a numerical answer.
  4. Take the online homework for the first time on the appropriate chapter. If your score <90%, go to step 5
  5. Do additional end-of-chapter problems that were not previously worked out as preparation for the online homework. Retake the online homework.
  6. Continue solving end-of-chapter problems until you get at least a 90% or higher on the online homework." (<http://osf1.gmu.edu/~gfoster/chem> 211 Web\_Pages/syllabus/spring\_2012 syllabus.pdf; accessed 16May2012)
- F. **Attendance/Absences:** The attendance policy of the University will be strictly enforced in this class. An attendance sheet will be passed around at each class meeting, and each student is

responsible for initialing the sheet appropriately to record attendance. Students arriving to class more than 5 minutes late to class (by my watch) will be counted as a late arrival. Two late arrivals count as a full absence. After **four** absences, the student will be turned in to the Office of Academic Support. After **eight** absences (the equivalent of four weeks of class), the student will be dropped from the course with a 'WA', this counts like an 'F' in grade-point average computation.

If a student misses the final exam for a documented emergency (traveling early for Christmas vacation or Spring Vacation does not count as an emergency), then a grade of 'X' will be assigned for the course, and a special exam must be taken within one month after the student re-enters the University (contingent on approval by the course instructor and the Vice President for Academic Affairs), otherwise, the 'X' becomes a failing grade and is so recorded.

Each student is responsible for all material covered in class, whether or not the student is in attendance, so always keep up with what was done during an absence by borrowing notes from other students and/or speaking with the instructor. Medical absences will be excused based on written advice from the campus nurse or a health-care provider (based upon clinical findings and prescribed treatment recommendations). The medical document must specifically indicate that you were unable to attend class/recitation. All excused absences require written documentation and will be verified by the chemistry department staff. **No verbal or email excuses will be accepted.**

#### H. **Classroom Behavior:**

##### 1. **Your basic responsibilities include:**

- a. Attend all lectures, recitations and exams and bring a scientific calculator.
- b. Read the assigned material prior to class.
- c. Study your lecture notes and assigned text reading.
- d. Do assigned homework problems on time and review them before exams.
- e. Do not fall behind!
- f. Take all examinations!

2. All students are expected to behave in a manner that is conducive to a learning/teaching environment. This includes begin respectful to fellow students, guest speakers, and me. Students who engage in behavior that is disruptive to the learning environment will be asked to leave for the remainder of the class period.
3. Guests are only allowed in class at the discretion of and with prior approval from the instructor.
4. Electronic recording devices of any kind are not permitted except in special circumstances and with the specific permission of the instructor.
5. While you are expected to attend and participate in this class, your cell phone, computer, and MP3 players are **not**. Pagers, cell phones, and similar items are disruptive to the entire class and **must be turned off** during class. **The owner of any such device that activates during class will be immediately excused from class and counted as absent for the entire period.**
6. **USE OF CELL PHONES, COMPUTERS, AND MP3 PLAYERS DURING EXAMINATIONS AND QUIZZES WILL BE CONSIDERED ACADEMIC DISHONESTY, WHICH WILL RESULT IN A ZERO BEING AWARDED FOR THE QUIZ OR EXAMINATION (NO EXCEPTIONS!).**
7. Hats and caps are to be removed prior to entering the classroom.
8. Take care of any physiological needs *before* coming into the classroom.
9. Unacceptable student behaviors:
  - a. Sleeping during class
  - b. Chronic tardiness. Be here ready to learn when class begins.
  - c. Reading, studying or working on materials for other classes.
  - d. Chatting with your classmates when the instructor or other classmates are speaking.
  - e. Prematurely packing up your books and bags before class has been dismissed.

- I. **Academic Misconduct/Integrity:** Students in this course will be working toward mastery of the material to satisfy the course objectives. ***This class is held to an honor system, meaning that cheating, allowing someone to cheat, or failing to report known cases of cheating are all***

**considered academic misconduct.** Cheating includes, but is not limited to, any attempt to present the work of another as your own; discussing or copying exams, quizzes, or homework with students who have not yet completed them; using "cheat sheets" on exams or quizzes; altering a test for re-grade, plagiarism of primary or secondary sources of information or using programmable calculators to store and/or recall prohibited information for an exam. Any student who refuses to allow a calculator to be inspected by the instructor upon request will not be allowed to use that calculator on the exam/quiz. Be aware that aggressive methods are used to protect the majority of you who are honest. **Students caught cheating or plagiarizing will receive a grade of zero for that test or assignment and may be given an F for the course.** A copy of the Division of Natural Sciences (DNS) policy on Academic Integrity is available on the course TigerNet page. Please read this policy and take it very seriously.

For information about plagiarism and how to avoid it, consult the following websites:

- Plagiarism? It's your call (Western Michigan University/Stanford University, 2008)  
<http://www.wmich.edu/library/searchpath/module6>
- The Plagiarism Court: You Be the Judge (Islam,2007, Fairfield University)  
[http://www.fairfield.edu/library/lib\\_plagiarismcourt.html](http://www.fairfield.edu/library/lib_plagiarismcourt.html)
- What is Plagiarism? (Pearson/Prentice-Hall)  
[http://wps.prenhall.com/hss\\_understand\\_plagiarism\\_1/](http://wps.prenhall.com/hss_understand_plagiarism_1/)
- Indiana University Bloomington, School of Education (accessed 16May2012)  
<http://www.indiana.edu/~istd/>

Students will be asked to sign an integrity statement on each assignment/examination/quiz. The following statement reads as follows:

"I pledge on my honor that on this assignment/examination/quiz I have neither received nor given nor have I seen any dishonest work.

Signature \_\_\_\_\_ Date \_\_\_\_\_"

## VII. BOOK LIST:

- A. "Analytical Chemistry", Journal, American Chemical Society. (1993-present), Online access.
- B. APHA-AWWA-WPCF, Standard Methods for the Examination of Water and Wastewater, 15th ed, American Public Health Association (1981).
- C. Freiser, Henry, Concepts & Calculations in Analytical Chemistry-A Spreadsheet Approach, CRC Press (1992).
- D. Journal of Chemical Education: Software, Vol. VB, #1, Division of Chemical Education of the American Chemical Society (1992).
- E. Journal of Chemical Education: Software, Vol. IIB, #2, Division of Chemical Education of the American Chemical Society (1989).
- F. Selected articles from Journal of Chemical Education, published by the Division of Chemical Education of the American Chemical Society.
- G. Skoog, West and Holler, "Fundamentals of Analytical Chemistry", 8<sup>th</sup> ed., Brooks-Cole Publishing (2004).
- H. Harris, Daniel, "Quantitative Chemical Analysis", 7<sup>th</sup> ed., W.H. Freeman (2006).

## VIII. DISABILITIES

Campbellsville University is committed to reasonable accommodations for students who have documented physical and learning disabilities, as well as medical and emotional conditions. If you have a documented disability or condition of this nature, you may be eligible for disability services.

Documentation must be from a licensed professional and current in terms of assessment. Please contact the Coordinator of Disability Services at 270-789-5192 to inquire about services.



## IX. ACADEMIC SUPPORT

The Academic Support area, located in the Badgett Academic Support Center (BASC), exists to help students. At certain times, most students need some help with studying, choosing a career, major/minor, or assistance in a difficult course. The following services are available Career Services, Disability Services, tutoring, and the Citizens Bank & Trust Writing Center. These services are provided at no extra cost to the student. Space is also available for individual and group study, and laptop computers are available for students to check-out and use within the building. Information about these services is accessible by clicking on the “Current Students” tab on the University website at [www.campbellsville.edu](http://www.campbellsville.edu). Information is also available by calling the Office of Academic Support at (270) 789-5064.

## X. TITLE IX

Campbellsville University and its faculty are committed to assuring a safe and productive environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972 and guidance from the Office of Civil Rights, the University requires all responsible employees, which includes faculty members, to report incidents of sexual misconduct shared by students to the University’s Title IX Coordinator.

### *Title IX Coordinator:*

Terry VanMeter

1 University Drive

UPO Box 944

Campbellsville, KY 42718

Administration Office 8A

Phone: 270-789-5016

Email: [twvanmeter@campbellsville.edu](mailto:twvanmeter@campbellsville.edu)

Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is set forth at: [www.campbellsville.edu/titleIX](http://www.campbellsville.edu/titleIX)

### ***TENTATIVE LECTURE/READING SCHEDULE (subject to minor changes)***

<b>Week of</b>	<b>Material</b>	<b>Readings/ Chapters</b>	<b>Supplemental/ Homework Problems</b>	<b>Deadline / Due Date</b>	<b>Lab Experiment</b>
AUG 25	Course Overview, Chemical Basics	1,4	Ch. 4: 7,8,12,14,22	Syllabus Quiz Math Test due	Exp #1
AUG 31	Gravimetric Analysis Experimental Error, Statistics	12 5-8	Ch. 12: 8,10,14,21,28,29	Chem. Calc. HW (Ch4) due	Exp #2
<b>SEP 7</b> 8	<b><i>Labor Day - No Class</i></b> Experimental Error, Statistics Equilibrium Fundamentals, Effect of Electrolytes	5,6,7,8 9,10	Ch. 5: 9,10; Ch. 6: 5,6,7,9 Ch. 7: 7,9,16; Ch. 8: 4,7,13	Grav. Analys. HW due (Ch12)	Exp #3
14	Equilibrium Fundamentals Effect of Electrolytes on Chemical Equilibrium	9 10	Ch. 9: 7,9,12,13,15,20,25,27 Ch. 10: 7,8,12		
21	<b>EXAM 1</b> Equilibrium Fundamentals, Effect of Electrolytes; Multiple Equilibria; Systematic Solving of Equilibria	<b>Ch. 1,4,12, 5-8</b> 9,10 11	Ch. 11: 4,8,11,13,15,16	<b>Exam 1</b> ExpError, Stats, Sampl, HW due	Exp #4
28	Multiple Equilibria; Systematic Solving of Equilibria; Titrimetric Methods; Precipitation Titrations	11 13		Chem. Equil. (Ch9), Effects Act.(Ch10) HW due	

OCT 5	Titrimetric Methods; Precipitation Titrations; Principles of Neutralization Titrations	13 14	Ch. 13: 8,10,13,15,25,30,31 Ch. 14: 18,19,25,27,29,32,34,41,42	System. Equil. (Ch11) HW due	
12 <i>Oct 15-16</i>	<b>MID-TERM WEEK</b> Neutralization Titrations <b>Fall Break—No Class</b>	14		Princ Titr. (Ch13) HW due	
19	<b>EXAM 2</b> Complex Acid/Base Systems Applications of Neutralization Titrations	<b>Ch. 9-11,13</b> 15 16	Ch. 15: 2,8,12,20,26 Ch. 16: 8,10,14,16,23,29,33	<b>Exam 2</b>	Exp #5
26	Complex Formation Reactions and Titrations	17	Ch. 17: 15,17,25,32		
NOV 2	Applications of Oxidation/Reduction Titrations Introduction to Spectrochemical Methods	20 24	Ch. 20: 29,33,38,40,54b,d Ch. 24: 6,7,14,15,18,23	A&B Equil. HW due EDTA Titn. HW due	Exp #6
9	Introduction to Spectrochemical Methods Introduction to Electrochemistry	24 18	Ch. 18: 9,13,15,18,20	Polyprot. A&B HW due A&B Titns. HW due	
16	Introduction to Electrochemistry Applications of Standard Electrode Potentials	18 19	Ch. 19: 8,11,15		Lab Make-Up Day
23 25	<b>EXAM 3</b> <b>THANKSGIVING BREAK—NO CLASS</b>	<b>Ch. 14-17</b>		<b>Exam 3;</b> Electrochem. HW due	
NOV 30	Applications of Standard Electrode Potentials General Review	19		Spectros. HW due	
DEC 7	<b>Final Exam, Tuesday, Dec. 8, 8:00 am</b>			<b>Final Exam</b>	
<b><i>In the event of class cancellation for any reason (weather, instructor illness, etc.) exams or other scheduled activities will be administered in the next active class period.</i></b>					

## CHE 321-01: Analytical Chemistry

### Student's Acceptance of Course Policies

Please fill out and sign the following form and to the instructor. **Use a blue or black pen (no pencil).**

I, \_\_\_\_\_, have read the entire syllabus describing the course  
(Print your name neatly)

policies for CHE 321, Analytical Chemistry, taught by Ms. E. Kay Sutton. I fully understand these policies and I agree to comply with them during the entire \_\_\_\_\_ term.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_