CHEMISTRY 101, General Chemistry II and Lab
Section A, CHEM101 A; Section B, CHEM101 B
Bard College at Simon's Rock Division of Science, Mathematics, and Computing
Patty Dooley, Ph.D.

1. Administrative Details.

a. Office: Fisher Science & Academic Center, Room 130 (F130)
Extension 4966; (from off-campus, 413-644-4966) e-mail: pdooley@simons-rock.edu
Home phone 413-528-7984 (call before 10:00 p.m.)

b. Office Hours: Any time I am not in class and I am here (and I am *always* here), Mon-Fri daily 8:00 a.m. – 5:00 p.m; or by appointment (***you*** name the time, we can negotiate what's convenient for you).

b. Class:
CHEM101A, Tues & Thurs 9:00 – 10:25 a.m. F102 (Clark Auditorium)
CHEM101B, Tues & Thurs 10:35 – 12:00 p.m. F102 (Clark Auditorium)

c. Laboratory:
CHEM101LA, Tues (Dooley) 1:50-4:45 p.m. F128 (Chemistry Lab)
CHEM101LB, Tues (Dongala), 6:35-9:00 p.m., F128 (Chemistry Lab)
CHEM101LC, Thurs (Dooley), 1:50-4:45 p.m. F128 (Chemistry Lab)

d. Textbook: "Chemistry: The Molecular Nature of Matter and Change," 5th Ed., Martin Silberberg (be sure to read *About the Author* in the preface) with ARIS (Assessment, Review, and Instruction System) access and custom-print Reference Data Cards. Your laboratory professor will provide handouts from which the student will work. There will also be a required laboratory notebook, available in the bookstore.

2. Support of the Academic Program.

a. The Goals of the Academic Program at Simon's Rock enumerated in the course catalog can be achieved through the curriculum offered to every student. Among these goals, you have the opportunity to develop[1]:

1. The ability to speak and write with confidence, clarity, and precision
2. The ability to read and think critically . . . learn and think independently
3. The ability to understand and interpret graphic and numerical data
4. Knowledge of the scientific method . . . and of the fundamental laws governing physical phenomena
5. Knowledge of and sensitivity to the moral and ethical dimensions of thought and action, and the ability to make informed moral and ethical decisions

[1] The Goals of the Academic Program, Bard College at Simon's Rock Catalog 2011-2012, p. 9.

b. My intent is to present General Chemistry in support of the Academic Program goals listed above through the following course goals. Each course goal maps to a goal of the Academic Program (identified in parentheses with the number of the academic program goal, above).

A. Promote problem solving and analytical reasoning (1-5)
B. Inspire students to think critically (2)
C. Motivate self-learning while enhancing study skills (1, 2, 5)
D. Demonstrate the relevance of chemistry to the real world (3, 4)
E. Integrate a laboratory program which reinforces classroom theory (3, 4)
F. Establish/improve scientific literacy (1-5)
G. Improve written and verbal communication skills (1, 3)

c. Course Description. Concepts are grouped by blocks of instruction, consisting of:

Block #1: PREPARING FOR SUCCES IN CHEM 101 QUALITATIVE ANALYSIS
Block #2: SOLUTIONS
Block #3: ORGANIC CHEMISTRY
Block #4: KINETICS
Block #5: EQUILIBRIUM
Block #6: ACID-BASE & SOLUBILITY PRODUCT EQUILIBRIUM
Block #7: THERMODYNAMICS: THERMOCHEMISTRY & ELECTROCHEMISTRY
Block #8: NUCLEAR CHEMISTRY

3. Laboratory Program. The laboratory will deal with the safe handling of chemicals, the apparatus of chemistry and the chemical lab, the collection of qualitative data, chemical identifications based on these data, as well as an introduction to some chemical instrumentation. You will conduct qualitative analysis of 11 metal cations and 6 nonmetal mono- or polyatomic anions during nine experiments; determine the rate constant of a reaction (one expt); perform acid-base titrations (one expt); and construct a voltaic cell (one expt). At the conclusion of the qualitative analyses, you will demonstrate your observation skills and deductive reasoning in a practicum exam. A written lab final exam is comprehensive of the entire semester. **Passing the laboratory component of the course is a pre-requisite for passing the course.** Students will complete six formal or informal laboratory reports and undergo oral examination during lab periods. The purpose behind the laboratory program is to:

1. Provide hands-on practical application of concepts from in the classroom
2. Encourage critical thinking
3. Develop self-learning
4. Demonstrate key concepts by using relevant lab experiments
5. Introduce you to and familiarize you with a variety of qualitative techniques
6. Enhance and improve technical writing skills

4. Course Requirements:

a. **Attendance**: Attendance at class is a pre-requisite for success in chemistry. A direct correlation exists between numbers of absences and lower grades. The more times a student was absent, the lower the grade the student earned—keeping up with material when you don't attend class is very challenging. I adhere to existing college policies (see the 2011-2012 Course Catalog) regarding observation of religious holidays (they are permitted, with advance notification and dates scheduled for make-up tests before the absence) and unexcused absences (they are not permitted, and more than two absences from lecture OR one from lab puts the student into 'max cut' territory. The next absence after that—

'overcut'—results in suspension from the course or lab). You may or may not be re-admitted to the course. *Lateness will be treated as one-half of a cut if after the beginning of lecture, but before **five** minutes into class, and a full cut thereafter.*

b. **Absence from graded events:** Absences from announced, scheduled graded events will result in a zero score earned for that graded event. I may consider offering a make-up test if the student notifies me ***beforehand*** (not the morning of the exam) of dire circumstances (actual cases I encountered last year include: stuck in an airport returning from break; undergoing medical procedures; serving on jury duty; or so sick as to seek out medical attention at the Student Health Clinic). Telling me after the start of class that you are going to be absent constitutes an unexcused absence and will earn you the zero. If you tell me the day before class that you are going to be absent, I ***may*** consider that your absence was excusable and offer a make-up or make-ahead test.

c. **Final examination**: The published dates for the final exam period are Monday, 14 May through Wednesday, 16 May 2012. The exact schedule for each course will not be published until well into the semester. If the CHEM101 exam is assigned to the last exam period of the last day, you will be expected to attend; do not make any travel arrangements that interfere with this possibility. There will be no make-aheads, no make-ups, no starting the final earlier or later than the time period assigned.

d. **Lesson Assignments:** The outline of the course is available separately on E-Reserves as an Excel spreadsheet entitled "CHEM 101 Spring 2012 Lsn & Lab Sequence." Key dates are identified for exam periods and when laboratory experiment reports are due. A second Excel spreadsheet specifies the point value of each lesson and what type of graded event occurs during that lesson ("Point Value per Lesson"). Individual lesson assignments will be posted on the CHEM101 page on the Simon's Rock library E-Reserves. The outline and each lesson assignment are this extensive because I expect you to read the assignment, evaluate whether you have achieved the learning objectives for that lesson, and work the homework problems before you come to class. It is vital that you know what will be covered during every given lesson. I use the Socratic Method in my teaching, as opposed to simply lecturing to sponges on a hydration spectrum of bone-dry to sopping wet.

e. **Class Participation:** You will participate in class by asking about any material in the reading that you didn't understand, answering my questions directed to you about the reading, offering answers to other students about a particular method for solving a problem, and talking me through a correct technique for obtaining a solution. You will be expected to contribute to class discussions.

f. **Missed Work:** You will make up all missed work in a timely fashion. Chemistry is a topic that is continuous and cumulative; gaps in your lesson attendance will have significantly negative downstream consequences. My office hours policy is intended to enable you to easily make up missed material.

5. Grading:

a. There will be five exams in this course; three in class, one take-home, and one cumulative final. In addition, homework assignments for each lesson are to be completed and submitted on-line at the ARIS site the *no later than 30 minutes before* that lesson. All lesson assignments are posted well in advance on E-Reserves, the entire semester of ARIS assignments are visible; you do not have to wait until the assignment or test is due to begin working on it. Class participation will be expected and graded.

Further, instead of in-class assignments as in CHEM 100, each lesson will commence with a 20-point Beginning-of-Lesson Quiz (BOLQ) that will cover material from the previous lesson in the form of a variation on ARIS assignment questions. Some BOLQ will be open book, open note, open classmate, or be a solo effort; check each lesson assignment for guidance. To encourage punctuality, students will be able to peruse the BOLQ for the five minutes before class; the quiz will begin exactly at the start of class and last no longer than ten minutes.

b. **Grading Scale.**

To earn a passing grade, a student must pass at least one exam. A student earning an average percentage for the course will earn the corresponding grade:

93.33%	A	86.67%	B+	76.67%	C+	66.67%	D
90.00%	A-	83.33%	B	73.33%	C	<66.67%	F
		80.00%	B-	70.00%	C-		

#	Event	Points per event	% per event	Points possible	% Possible
24	ARIS Homework assignment	10	0.45%	240	10.81%
19	Beginning of Lesson Quiz	20	0.90%	380	17.12%
1	Oral presentation	50	2.25%	50	2.25%
4	Exam	125	5.63%	500	22.52%
4	Laboratory expt & report	50	2.25%	200	9.01%
2	Laboratory expt & report	100	4.50%	200	9.01%
1	Lab final exam (practicum)	100	4.50%	100	4.50%
1	Lab final exam (written)	100	4.50%	100	4.50%
1	Final exam @ 400 points	400	18.02%	400	18.02%
	Class participation	50	2.25%	50	2.25%
	Total points possible			**2220**	**100.00%**

c. **Presentation.**

(i) According to the first two program goals of the Simon's Rock academic program, students are expected to demonstrate (1) the ability to speak and write with confidence, clarity, and precision and (2) the ability to read and think critically . . . learn and think independently. Presentations develop these abilities in students and accomplish two course goals for Chemistry II: motivate self-learning while enhancing study skills and demonstrate the relevance of chemistry to the real world.

(ii) Once you are assigned the presentation for a given lesson, you must research how it corresponds to learning objectives and topics in that and previous lessons. Presentations will be given at the beginning of the class period after the BOLQ. Your presentation should cover the topic to the extent that your classmates can draw enough information that they could answer quiz or exam questions about your material. You will have a total of ten minutes to set up (~1 min), talk (5-6 min), answer questions/discussion (1-2 min), and conclude (1 min). You may generate no more than three slides for a PowerPoint presentation or a single page handout. I will project any figures or tables from the textbook you require if you identify the image to me no later than 24 hours before your presentation.

(iii) Speak slowly and loudly enough that everyone can hear you. Introduce yourself to the class. Identify the lesson number, title, what your topic is, and in *your own words* state the major points of the topic. In your research, identify questions you imagine you could be asked about the topic, and point

these out to your classmates. At the conclusion of your presentation, ask for questions from the audience and answer to the best of your ability; if you don't understand the question, restate it and ask the questioner if you have grasped the question correctly before you start to answer. At the end of your presentation, thank the audience for their attention and tell them your presentation is concluded.

Date	Lsn #	Lab #	Chapter	Sec	Topic	*Connect* LearnSmart, Homework (Extra Credit)	In-Class Exercise (Formative Assessment)	Chapter Quiz, Block Exam	Lab Expt Report, Worksheet	Total Points
			Chapters		PREPARING FOR SUCCESS IN CHEM 101L QUALITATIVE ANALYSIS					
28 Jan 14	1		Ch 3, 4, 13		Prelude to CHEM 101 Lab: Things you need to remember and to learn first					
			3	5	Fundamentals of Solution Stoichiometry					
			4	2	Writing Equations for Aqueous Ionic Reactions					
			4	3	Precipitation Reactions					
			4	4	Acid-Base Reactions					
			4	5	REDOX Reactions					
			4	7	Reversibility of Reactions and the Equilibrium State					
			13	3	Why Substances Dissolve, pp. 488 – 489 only					
			13	4	Solubility as an Equilibrium Process, p. 492 – 493 only	+20	10			10
28 & 30 Jan 14		1			Solution Preparation; Separation Scheme for Group IV Metal Cations					
30 Jan 14	2		Chs 17, 19		Net Ionic Equations; predicting precipitation; equilibrium, K_c, K_f					
			17	1	The Equilibrium State and the Equilibrium Constant					
			17	2	The Reaction Quotient and the Equilibrium Constant					
			17	4	Comparing Q and K to determine Reaction Direction					
			17	6	Reaction Conditions and Equilibrium: Le Châtelier's Principle					
			19	3	Equilibria of Slightly Soluble Ionic Compounds	+15	10			20
					Block #1: STATES OF MATTER					
			Chapter 12		Intermolecular Forces: Liquids, Solids, and Phase Changes					
4 Feb 14	3		12	1	An Overview of Physical States and Phase Changes					
			12	2	Quantitative aspects of phase changes					
			12	3	Types of Intermolecular Forces	+5	10			30
4 & 6 Feb		2			Continued: Group IV Metal Cations (Ba^{2+}, Ca^{2+}, Mg^{2+}) & Practicum				50	
6 Feb 14	4		12	4	Properties of the Liquid State					
			12	5	The Uniqueness of Water					
			12	6	The Solid State: Structure, Properties, and Bonding	+5	10	20		110
					Block # 2: SOLUTIONS					
			Chapter 13		The Properties of Mixtures: Solutions and Colloids					
11 Feb 14	5		13	1	Types of solutions: intermolecular forces and solubility					
			Scan 13	2	Intermolecular forces and biological macromolecules					
			13	3	Why substances dissolve: understanding the solution process					
			13	4	Solubility as an equilibrium process					
			13	5	Concentration terms	+5	10			120

Date	Lsn #	Lab #	Chapter	Sec	Topic	*Connect* LearnSmart, Homework (Extra Credit)	In-Class Exercise (Formative Assessment)	Chapter Quiz, Block Exam	Lab Expt Report, Worksheet	Total Points
11 & 13 Feb 14		3			Group III Metal Cations [chromium(III), manganese(II)]					
13 Feb 14	6		13	6	Colligative properties of solutions	+5	10			130
18 Feb 14	7		13	7	The structure and properties of colloids	+5		20		150
18 & 20 Feb 14		4			Group III Metal Cations [iron(III), cobalt(II)]				50	200
20 Feb 14	8				**EXAM I**			125		325
					Block #3: ORGANIC CHEMISTRY					
25 Feb 14	9		Chapter 15		Organic compounds and the atomic properties of carbon					
			15	1	The special nature of carbon and the characteristics of organic molecules					
			15	2	The structures and classes of hydrocarbons					
			15	3	Some important classes of organic reactions	+5	10			335
25, 27 Feb 14		5			Organic synthesis, polymerizations				25	360
27-Feb-14	10		15	4	Properties and reactivities of common functional groups					
			15	5	The monomer-polymer theme I: synthetic macromolecules					
			15	6	The monomer-polymer theme II: biological macromolecules	+5	10	20		390
					Block #4: KINETICS					
4 Mar 14	11		Chapter 16		Kinetics: rates and mechanisms of chemical reactions					
			16	1	Focusing on reaction rate					
			16	2	Expressing the reaction rate	+5	10			400
4, 6 Mar 14		6			Group III & IV Practicum					
6 Mar 14	12		16	3	The rate law and its components					
			16	4	Integrated rate laws: concentration changes over time	+5	10			410
11 Mar 14	13		16	5	Theories of chemical kinetics					
			16	6	Reaction mechanisms: the steps from reactant to product					
			16	7	Catalysis: speeding up a reaction	+5	10	20		440
11 & 13 Mar 14		7			Determining the rate law and rate constant of a reaction				25	465
13 Mar 14	14				**EXAM II**			125		590

Date	Lsn #	Lab #	Chapter	Sec	Topic	*Connect* LearnSmart, Homework (Extra Credit)	In-Class Exercise (Formative Assessment)	Chapter Quiz, Block Exam	Lab Expt Report, Worksheet	Total Points
					Block #5: EQUILIBRIUM					
1 Apr 14	15		Chapter 17		Equilibrium: the extent of chemical reactions					
			17	1	The equilibrium state and the equilibrium constant					
			17	2	The reaction quotient and the equilibrium constant					
			17	3	Expressing equilibria with pressure terms: relation between K_c and K_p	+5	10			600
1 & 3 Apr 14		8			Complete Group III & IV Metal Ions Practicum				50	650
3 Apr Mar 14	16		17	4	Comparing Q and K to determine reaction direction					
			17	5	How to solve equilibrium problems					
			17	6	Reaction conditions and equilibrium: Le Châtelier's principle	+5	10	20		680
					Block #6: ACID-BASE & SOLUBILITY PRODUCT EQUILIBRIUM					
8 Apr 14	17		Chapter 18		Acid-base equilibria					
			18	1	Acids and bases in water					
			18	2	Autoionization of water and the pH scale					
			18	3	Proton transfer and the Brønsted-Lowry acid-base definition	+5	10			690
8 & 10 Apr 14		9			Determination of K_c by spectrophotometry				25	715
10 Apr 14	18		18	4	Solving problems involving weak-acid equilibria					
			18	5	Weak bases and their relation to weak acids					
			18	6	Molecular properties and acid strength	+5	10			725
15 Apr 14	19		18	7	Acid-base properties of salt solutions					
			18	8	Generalizing the Brønsted-Lowry concept: the leveling effect					
			18	9	Electron-pair donation and the Lewis acid-base definition	+5	10	20		755
15 & 17 Apr 14		10			Group II Metal Cations [copper(II), tin(II), & tin(IV)]				25	780
17 Apr 14	20		Chapter 19		Ionic equilibria in aqueous systems					
			19	1	Equilibria of acid-base buffers	+5	10			790
22 Apr 14	21		19	2	Acid-base titration curves					
			19	3	Equilibria of slightly soluble ionic compounds					
			19	4	Equilibria involving complex ions	+5	10	20		820
22 & 24 Apr 14		11			Group I Metals [Ag^+, lead(II)]; Group I, II, & IV Practicum					
24 Apr 14	22				**EXAM III**			125		945

Date	Lsn #	Lab #	Chapter	Sec	Topic	*Connect* LearnSmart, Homework (Extra Credit)	In-Class Exercise (Formative Assessment)	Chapter Quiz, Block Exam	Lab Expt Report, Worksheet	Total Points
					Block #7: THERMODYNAMICS: THERMOCHEMISTRY & ELECTROCHEMISTRY					
29 Apr 14	23		Chapter 20		Thermodynamics: entropy, free energy, and the direction of chemical reactions					
			20	1	The second law of thermodynamics: predicting spontaneous change					
			20	2	Calculating the entropy change of a reaction	+5	10			955
29 Apr & 1 May 14		12			Group I Metals [Ag^+, lead(II)]; Group I, II, & IV Practicum				50	1005
1 May 14	24		20	3	Entropy, free energy, and work					
			20	4	Free energy, equilibrium, and reaction direction	+5	10	20		1035
6 May 14	25		Chapter 21		Electrochemistry: chemical change and electrical work					
			21	1	Redox reactions and electrochemical cells					
			21	2	Voltaic cells: using spontaneous reactions to generate electrical energy					
			21	3	Cell potential: output of a voltaic cell	+5	10			1045
6 & 8 May 14		13			Lab final exam (practicum)					
8 May 14	26		21	4	Free energy and electrical work					
			21	5	Electrochemical processes in batteries					
			21	7	Electrolytic cells: using electrical energy to drive nonspontaneous reactions	+5	10	20		1075
					Block #8: NUCLEAR CHEMISTRY					
13 May 14	27		Chapter 24		Nuclear reactions and their applications					
			24	1	Radioactive decay and nuclear stability					
			24	2	The kinetics of radioactive decay					
			24	3	Nuclear transmutation: induced changes in nuclei	+5	10			1085
13, 15 May 14		14			Lab final exam (practicum) completion				75	1160
15 May 14	28		24	4	Effects of nuclear radiation on matter					
			24	5	Applications of radioisotopes					
			24	6	The interconversion of mass and energy					
			24	7	Applications of fission and fusion	+5		20		1180
					point totals	+150	230	575	375	1180

Extra credit points will accrue only when all formative assessments are turned in and all chapter quizzes are completed.

Connect LearnSmart & Homework assignments accrue 0 points if late. Quizzes: -5% per day late.

Final Exam	300
Participation	50
Presentations	70
Total Points	1600

January 2014/February 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26 Jan **Week 1** **Expt 1**	**27**	**28** **Lsn 1 Review §3.5, §4.2-4.5 & 4.7** **Preview §13.4 & 13.5** **Expt 1: Separation Scheme Reactions for Group IV Metal Cations**	**29**	**30** **Lsn 2 Preview §17.1, 2, 4, 6; §19.3** **Expt 1: Separation Scheme Reactions for Group IV Metal Cations**	**31**	**1 Feb**
2 Feb **Week 2** **Expt 2**	**3**	**4** **Lsn 3** **§12.1 – 12.3** **Expt 2: Continued: Group IV Metal Cations (Ba^{2+}, Ca^{2+}, Mg^{2+}) & Practicum**	**5**	**6** **Lsn 4** **§12.4 – 12.6, Chapter 12 Quiz** **Expt 2: Continued: Group IV Metal Cations (Ba^{2+}, Ca^{2+}, Mg^{2+}) & Practicum**	**7**	**8**
9 **Week 3** **Expt 3**	**10**	**11** **Lsn 5** **§13.1, (scan 13.2), 13.3** **Review §13.4 & 13.5** **Expt 3: Group III Metal Cations [chromium(III), manganese(II)]**	**12**	**13** **Lsn 6** **§13.6** **Expt 3: Group III Metal Cations [chromium(III), manganese(II)]**	**14**	**15**
16 **Week 4** **Expt 4**	**17**	**18** **Lsn 7** **§13.7, Chapter 13 Quiz** **Expt 4: Group III Metal Cations [iron(III), cobalt(II)]**	**19**	**20** **Lsn 8 EXAM I** **Expt 4: Group III Metal Cations [iron(III), cobalt(II)]**	**21**	**22**
23 **Week 5** **Expt 5**	**24**	**25** **Lsn 9** **§15.1 – 15.3** **Expt 5: Organic synthesis, polymerizations**	**26**	**27** **Lsn 10** **§15.4 – 15.6 Chapter 15 Quiz** **Expt 5: Organic synthesis, polymerizations**	**28**	**1 March**

March 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
2 **Week 6** **Expt 6**	**3**	**4** **Lsn 11** **§16.1 – 16.2** **Expt 6: Group III & IV Metal Ions Practicum**	**5**	**6** **Lsn 12** **§16.3 – 16.4** **Expt 6: Group III & IV Metal Ions Practicum**	**7**	**8**
9 **Week 7** **Expt 7**	**10**	**11** **Lsn 13** **§16.5 – 16.7 Chapter 16 Quiz** **Expt 7: Determining the rate law and rate constant of a reaction**	**12**	**13** **Lsn 14 Exam II** **Expt 7: Determining the rate law and rate constant of a reaction**	**14**	**15**
16	**17**	**18**	**19**	**20**	**21**	**22**
23	**24**	**25**	**26**	**27**	**28**	**29**
30	**31**	**1 April**	**2**	**3**	**4**	**5**

Spring Break

Spring Break

April 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
Week 8 Expt 8	31 March	1 Lsn 15 §17.1 – 17.3 Expt 8: Complete Group III & IV Metal Ions Practicum	2	3 Lsn 16 §17.4 – 17.6 Chapter 17 Quiz Expt 8: Complete Group III & IV Metal Ions Practicum	4	5
6 Week 9 Expt 9	7	8 Lsn 17 §18.1 – 18.3 Expt 9: Determination of K_c by spectrophotometry	9	10 Lsn 18 §18.4 – 18.6 Expt 9: Determination of K_c by spectrophotometry	11	12
13 Week 10 Expt 10	14	15 Lsn 19 §18.7 – 18.9 Chapter 18 Quiz Expt 10: Group II Metal Cations [copper(II), tin(II), & tin(IV)]	16	17 Lsn 20 §19.1 Expt 10: Group II Metal Cations [copper(II), tin(II), & tin(IV)]	18	19
20 Week 11 Expt 11	21	22 Lsn 21 §19.2 & 19.4 review §19.3 Chapter 19 Quiz Expt 11: Group I, [Ag^+, lead(II)]; Group I, II, & IV Practicum	23	24 Lsn 22 Exam III Expt 11: Group I, [Ag^+, lead(II)]; Group I, II, & IV Practicum	25	26
27 Week 12 Expt 12	28	29 Lsn 23 §20.1 – 20.2 Expt 12: Group I, [Ag^+, lead(II)]; Group I, II, & IV Practicum Completion	30	1 May	2	3

May 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
Week 12 Expt 12				**1 Lsn 24 §20.3 – 20.4 Chapter 20 Quiz Expt 12: Group I, [Ag^+, lead(II)]; Group I, II, & IV Practicum Completion**	**2**	**3**
4 Week 13 Expt 13	**5**	**6 Lsn 25 §21.1 – 21.3 Expt 13: Lab Final Practicum**	**7**	**8 Lsn 26 §21.4 – 21.7 Chapter 21 Quiz Expt 13: Lab Final Practicum**	**9**	**10**
11 Week 14 Expt 14	**12**	**13 Lsn 27 §24.1 – 24.3 Expt 14: Completion of Lab Final Practicum**	**14**	**15 Lsn 28 §24.4 – 24.7 Chapter 24 Quiz Expt 14: Completion of Lab Final Practicum**	**16 Reading Day**	**17**
18	**19 Final Exams**	**20 Final Exams**	**21 Final Exams**	**22**	**23**	**24**
25	**26 Graduation**	**27**	**28**	**29**	**30**	**31**

3 Jun 2014: End-of-semester Grades & Comments Due