

## General Chemistry II (CHEM 102) Winter Term, 2018

### Course components:

1) lecture; 2) online homework (Mastering Chemistry); 3) recitation; and 4) laboratory.

### Objectives:

At the end of the course, students should be able to:

- solve conceptual questions regarding the atomic and molecular nature of matter;
- learn the basis of the structure and the physical properties of solids, liquids, and gases;
- understand the factors affecting the chemical reactivity of solids, liquids, and gases;
- solve quantitative problems with stoichiometry, chemical equilibria, and rates of chemical reactions;
- use chemical terminology and units of measures correctly;
- run elementary chemistry experiments and interpret experimental data using appropriate software tools.

### Lecturers:

- Dr. **Monica Ilies**; Chemistry Department; Office: Disqué 224 [course coordinator]
  - Lecture C: Mon, Wed, Fri; 11:00-11:50 PM; Disqué 103
  - Lecture E (honors): Mon, Wed, Fri; 2:00-2:50 PM; Disqué 103
- Dr. **Lee Hoffman**; Chemistry Department; Office: Disqué 417
  - Lecture B: Mon, Wed, Fri; 12:00-12:50 AM; Disqué 103
  - Lecture F: Mon, Wed, Fri; 4:00-4:50 PM; Stratton 113
- Dr. **Daniel King**; Chemistry Department; Office: Disqué 509
  - Lecture A: Mon, Wed, Fri; 9:00-9:50 AM; Disqué 103
- Dr. **Craig McClure**; Chemistry Department; Office: Stratton 412
  - Lecture D: Mon, Wed, Fri; 1:00-1:50 PM; Disqué 103

### First e-mail contact for general course inquiries:

Dr. Monica Ilies: [mi73@drexel.edu](mailto:mi73@drexel.edu)

### First e-mail contact for MasteringChemistry inquiries:

Dr. Paul Deroo: [pwd26@drexel.edu](mailto:pwd26@drexel.edu)

### First e-mail contact for laboratory and recitation inquiries:

**Please see the contact information for the corresponding instructors (posted to the course website).**

**Course Website:** <https://learn.dcollege.net>

**Note:** Most of our communication will be by e-mail and via the course website. **Please check the course website and your Drexel e-mail account REGULARLY. Make sure you set up correctly your Drexel e-mail account (see the instructions in the “CHEM 102 - Welcome e-mail”, also posted on the course website in case you did not receive it).**

### Required Course Materials:

**If you took CHEM 101 at Drexel University last fall, you do NOT need to purchase ANY new materials.**

**Note:** Please read the “CHEM 102 - Welcome e-mail” for instructions about how to purchase/use course materials. **The welcome e-mail is also posted on the course website in case you did not receive it.**

### Textbook:

Nivaldo Tro, *Chemistry: Structure and Properties*, Pearson, Second Edition. The cheapest option: buy it as part of the package with the Mastering Chem access code. **The ISBN for the package is 9780134557304. Please read the welcome e-mail (also posted on the course website) for options regarding the textbook.**

**Note:** If you use a hardcopy of the textbook, you do NOT need to bring it to any of your CHEM 102 classes.

### Laboratory Manual:

Edward J. Thorne, Jr., *Laboratory Manual for General Chemistry: CHEM 101/CHEM 102*;  
ISBN: 9781506698380

**Note:** Older copies of the lab manual CANNOT be used (the lab manual has been modified from last year).

### Supplementary Materials

a) **MasteringChemistry access code**, EITHER as part of the textbook bundle OR purchased separately.

#### Notes:

- a<sub>1</sub>) **Unless you took CHEM-050 over the summer, CHEM 101 over the fall and/or CHEM 101/102 during the last academic year**, the Mastering Chemistry access codes must be new, cannot be shared or reused and are valid for 24 months. The codes are **uniquely** associated with your name, your Drexel ID number, and your online homework grade.
- a<sub>2</sub>) **Do NOT register for Mastering Chemistry before you read the Mastering Chemistry instructions** posted on the course website!
- a<sub>3</sub>) Do NOT lose the access code or you will be required to purchase a new code to replace it. Do not forget the password for your Mastering Chemistry account.

b) A **simple scientific or graphing calculator** for use in labs and on exams.

**Note:** A periodic table, key equations and the values for constants will be provided for each exam.

c) A pair of **safety glasses or goggles** and a **lab coat** that **MUST** be worn **AT ALL TIMES** in the laboratory.

### 1. Grading Structure:

<b>Activity</b>	<b>% Grade</b>	<b>Additional Information</b>
In-term Exams	40	See section 3.
Final Exam	25	See section 4.
Mastering Chemistry Assignments (deadlines included in the Course Schedule on p. 8)	10	<b>Register for Mastering Chemistry AFTER reading the "Mastering Chemistry Instructions" posted on the course website.</b>
Recitation	5	See section 5.
Lab	20	See section 6.
<b>Total</b>	<b>100</b>	

### Grading policy:

Students who meet all the requirements will earn grades in the following ranges: **A- to A+** if final score  $\geq 90\%$ ; **B- to B+** if final score  $\geq 80\%$ ; **C- to C+** if final score  $\geq 70\%$ ; **D to D+** if final score  $\geq 60\%$ . Exact grade

boundaries will be determined at the end of the term in a meeting with all lecturers. When determining grade boundaries, we consider student performance across ALL course components. **There is NO rounding and NO curving in this course.** Since 35% of the CHEM 102 final grade comes from recitation, lab, and Mastering Chemistry, students have multiple opportunities to boost up exam grades if needed. **Questions about grades should be raised as soon as possible. Please contact your corresponding instructors for any questions about your grades.** The course instructor(s) may contact you via e-mail if there are problems with your grades.

## **2. Lectures:**

Lectures will be given on sections of the text listed in the Course Schedule (see p. 8). **You are expected to read the corresponding listed sub-chapters BEFORE going to lecture or recitation.** Some of the subject matter NOT covered in lecture will be covered in lab. Lectures will emphasize the most important parts of the material from which you will be tested. Important announcements will also be made in class throughout the term. Therefore, **constant attendance in lectures is highly recommended.** **Not all required material will be covered in lecture in detail.** You are responsible for all material in the sections of the text listed in the Course Schedule, whether covered in lecture or not. **In college, lecturers guide your study and summarize/explain the key points of the material, but students are expected to connect the dots.** The Course Schedule is provided as a guide and will be revised if dictated by prevailing circumstances (e.g., pedagogical purposes, level of students' knowledge, etc.). **Cell phone use is disruptive to the classroom environment; hence instructors have the right to prohibit it during class.**

## **3. In-term exams: non-cumulative**

**Three, 50 min exams** will be given as indicated in the Course Schedule (see p. 8). Each in-term exam will consist of about 25 multiple-choice questions. **Exams may include questions on lab material.** **The average of the three in-term exams will represent 40% of the final CHEM 102 grade.**

Review sheets and practice questions for each exam will be posted on the course website. A review session will be held before each exam for the whole CHEM 102 class (**dates and times announced about one week in advance**). **The review session will be recorded and posted on the course website, both as videos and Word documents.** **Note: to make the most out of the review session, you must study and practice problem-solving constantly throughout the term.**

After the exam starts, no student will be allowed to leave the testing room without handing in the exam. Students arriving to the exam room more than 20 min late will not be permitted to take the exam. Students must bring their own operational writing instruments and calculators - **no sharing allowed.** A periodic table, key equations and values of important constants will be provided as needed. **No other materials will be allowed.**

It generally takes 3-6 school days for exam grades to be reported back to students.

**Active cell phones and the use of random-access devices (e.g., MP3 players, tablets, iPods) are NOT ALLOWED in exam rooms.** **Cell phones MAY NOT be used as a watch or calculator on exams. All students must obey proctors' instructions, including specific seating instructions.**

There will be **ONE** opportunity **during the last week of classes** to make up **ONLY ONE** missed exam. The make-up exam will include material covered after the third exam and will be taken at the same time by all students eligible to take it. **To be eligible to take the make-up exam, a student must e-mail Dr. Ilies as soon as possible AFTER missing the exam and receive confirmation in 2-4 days.** All **eligible** students will be notified by email regarding the date, time, and location of the make-up exam about one week in advance. ***The make-up exam can only be used to replace a missed exam, NOT to improve a grade on an exam that was taken.*** There will be **NO opportunity to retake the make-up exam**, regardless of the reason for missing it.

#### 4. Final Exam: cumulative

The final exam will be a **2-hour exam** held during final exams week. The date, location and start time will be set by the University. The final exam will consist of about **45-50 multiple-choice questions** and represents **25% of your final grade**. **If you received a failing grade (that is, < 60%) on one of the in-term exams, you MUST score at least 44% on the final exam to pass the class, regardless of your performance in the other course components.**

**All rules mentioned in Section 3 apply to the final exam, too. There is NO MAKE UP FOR THE FINAL EXAM. Students MUST be present for the final.**

**Final Exam Week is Tue, March 20<sup>th</sup> – Sat, March 24<sup>th</sup>. Students should expect to be at Drexel the entire week. The final exam will NOT be rescheduled to accommodate travel plans.**

#### 5. Recitations:

Recitations give you experience with problem-solving and individual study. Students are expected **to try to solve the end-of-the chapter problems assigned for Recitation** (listed in the **Course Schedule** - see p. 8) and **read** the corresponding sub-chapters in the textbook **before** coming to class. To solve the recitation assignments, you must read the corresponding material in the textbook and/or lecture notes. **The textbook contains many examples of similar conceptual and calculation problems solved in details.** With such a large class, some recitation sections are inevitably scheduled before getting to that material in lecture. Having recitation before lecture was actually reported as beneficial by many students evaluation, since it already prepares students for the corresponding lecture topics.

**Recitation grades** will be determined based on **BOTH participation and attendance**. Since there are 10 recitations, **each missed recitation** will translate into **10 points lost from your final recitation grade** (5 points for attendance and 5 points for participation). If you cannot attend your regularly scheduled recitation, you **must** attend another recitation **that very same week** AND you **MUST** sign in, with that instructor's permission, to earn credit for that week. **You MUST notify your regular instructor when you attend another recitation. You are NOT required to inform the course coordinator about your make-ups. You may only make up 3 recitations during the term. To find the schedule for all recitation sections,** access the Drexel Term Master Schedule (TMS) at:

[https://duapp2.drexel.edu/webtms\\_du/app](https://duapp2.drexel.edu/webtms_du/app)

select the current term in the middle of the page, then "Arts and Sciences" on the left bar, and then "Chemistry" in the center box. A list of chemistry courses will then be displayed, with CHEM 101 coming first in the list, followed by CHEM 102.

**Note:** Recitations scheduled to meet on **Mon, Jan. 15<sup>th</sup> (MLK University Holiday)** are **cancelled**. Students in these sections are encouraged to attend another recitation that week, but will **NOT** lose points if they do not attend another recitation. **These students will have recitation on Mon, Mar. 19<sup>th</sup>, so all students have 10 recitation classes.** The MLK make-up recitation at the end of the term will consist of a review for the final exam.

#### 6. Laboratories:

Laboratory supplements the course material by offering you training in basic experimental techniques, as well as in recording, analyzing and reporting of experimental results. **There will be NO CHEM 102 labs during the first week of the term, EVEN IF your lab section appears listed by the University in your lab schedule. DO NOT go to CHEM 102 labs during the first week. You will have a chemistry lab every other week, beginning week 2 for even-numbered lab sections (e.g., 068, 070, etc.) OR week 3 for odd-numbered lab sections (e.g., 069, 071, etc.)** (see the **Laboratory Schedule** on the next page).

**Laboratory Schedule: Disque Hall (see the Note below for exceptions)**

	Lab 1	Lab 2	Lab 3	Lab 4
<b>Title</b>	Exp. # 5 Ester Preparation (non-Honors only) <b>OR</b> Exp. #9 Separating Mixtures (Honors only)	Exp. #6 Kinetics of Alcohol Oxidation	Exp. #7 Acids & Bases	Exp. #8 Solubility Product Constant
<b>Even Number Lab Section</b>	<b>Week of January 15<sup>th</sup> *</b>	Week of January 29 <sup>th</sup>	Week of February 12 <sup>th</sup>	Week of February 26 <sup>th</sup>
<b>Odd Number Lab Section</b>	Week of January 22 <sup>nd</sup>	Week of February 5 <sup>th</sup>	Week of February 19 <sup>th</sup>	Week of March 5 <sup>th</sup>

**\*Note:** Labs for sections 66H and 68 will NOT run on Mon, Jan. 15<sup>th</sup> (MLK Holiday). These labs will run on Mon, Jan. 22<sup>nd</sup>, in Disqué 302, at the same time as the originally scheduled labs.

Before going to your first lab, you must read the "*CHEM 101-102 Lab Equipment Review*" and complete the lab equipment quiz posted on the course website in the "Lab" folder. You will hand in the quiz to your instructor at the beginning of your first lab.

You will receive a grade for each lab experiment, as follows:

A. You are required to submit a **legible, handwritten** procedure at the beginning of each lab, which is worth **5 points** of your lab report grade (see the "**Grading Rubrics**" at the end of each experiment in your lab manual). This procedure should be a **brief summary** (between half- and one-page long) of the "**Experimental Procedure**" section that is part of each experiment in your lab manual (write the summary of this section as steps or with bullets). If you do not hand in this procedure, you will still be allowed to complete the lab, but you will lose the **5 points** associated with that report component. **Late submissions of the procedure will NOT be accepted. The procedure signed by your instructor will be included as a picture (jpg file) in your lab report (see the "Instructions for Turnitin Submission" posted on the course website in the "Lab" folder).**

B. If you do not wear your **safety glasses at all times while in the lab** or fail to meet other safety requirements **AND/OR** if you do not clean the equipment and your workstation at the end of the experiment, you **may lose up to 5 points** from your grade for that experiment. Your instructor will write down a grade for safety and cleanliness on your data sheet. Make sure you ask for that grade before the data sheet is signed. That grade is also part of the grading rubrics and your instructor must remember it when grading your lab reports.

C. Data sheets **must be signed by the instructor prior to you leaving the lab** and may be shared with your lab partner only! Your safety/cleanliness grade must be written on it by your lab instructor. Data sheets will be included as a picture (jpg file) in your lab report (see the "Instructions for Turnitin Submission" posted on the course website in the "Lab" folder).

D. The other 80 points will be given for an original individual lab report that you must submit online. **Instructions on how to write and submit your lab reports are posted on the course website in the "Lab" folder (see the "Instructions for Turnitin Submission" file in that folder).** To write lab reports and receive full credit, use ALL information given in the "Treatment of the Data" and the "Laboratory Report" sections at the end of each experiment in your lab manual.

Lab reports are due one week after you do the experiment. If you have difficulty with the online submission of your lab report, you must contact your lab instructor to work out a solution **BEFORE** the

**deadline.** Five points will be deducted for each day (including weekends or holidays) that the lab report is late. Lab reports submitted **more than 2 weeks late** will NOT be accepted. **Failure to submit the lab report during the 2-week period will result in not more than 20 points score for that lab report (up to 5 points for the handwritten lab procedure and safety/cleanliness, respectively, and 10 points for the signed data sheet).**

The average of the scores for all lab grades **must be at least 55% to pass the course.** If you are retaking CHEM 102, you may be able to use the lab grade you earned during a previous term. You **MUST** contact the course coordinator to determine if you are eligible to take advantage of this opportunity.

You may collaborate with your lab partner on the calculations. However, **you are NOT allowed to copy and paste tables of data or detailed calculation sequences from your lab partner.** Check the Turnitin “Originality Report”. **If it is greater than 30%, you must rewrite the highlighted section and resubmit.** However, **any statement/table/calculation steps copied word-for-word from ANY source is considered plagiarism, even if Turnitin shows less than 30% similarity and even if you cite the source. Simple replacement of words with synonyms in copied statements is considered plagiarism as well.** Make sure you submit your work well in advance of the due date, so that you may make appropriate changes if the similarity is high to previously submitted papers. **If you are retaking the course, you must re-write your lab reports. Allowing your classmates to copy from your lab report is an academic integrity violation.**

**Any lab reports that are full or partial copies of any other source (lab manual, books, Internet, other students' reports, your own previously written lab reports, etc.) will receive zero (0) points. At the second offense, cases of cheating will also be reported to the University. To avoid plagiarism, once you understand the whole experiment and how you should organize your lab report, simply write it in your own words, without seeking any other sources of inspiration.** Please read Section 7 of the syllabus: Academic Honesty and/or Cheating.

**Everyone MUST wear a long-sleeve lab coat and safety glasses or goggles while in the lab. Prescription glasses must be covered with safety goggles unless written documentation is provided to the instructor that indicates that the lenses meet or exceed the ANSI Z87 1-1989 standard and are equipped with side shields. Contact lenses, bare legs (i.e., shorts or skirts/dresses) or open-toed shoes are NOT ALLOWED. All students must sign a safety sheet stating that you understand and will abide by this policy prior to being allowed to work in the lab.**

***If you are more than 5 minutes late to lab, you will NOT be permitted to perform the experiment at that time.***

You can make up **ONLY ONE** experiment during the make-up lab day (see the course schedule on p. 8). You are strongly advised to attend your regularly scheduled lab sessions or make up a missed lab in another section during the 2 weeks in which the same experiment runs. **The lab schedule for all lab sections is posted on the wall outside the room where labs run.** You are NOT required to inform the course coordinator about your make-ups, just your regular instructor and the instructor in whose section you would like to make up the missed experiment. **Only 24 students are allowed in the lab at the same time, so you must arrange your make-up in advance.**

- Notes:**
- 1) **Make-up labs at the end of the term MAY NOT run in the same room or at the same time as your regular labs.** You will be informed about the location of the make-up labs during lectures and through the course website.
  - 2) The make-up lab day can **ONLY** be used for experiments that were missed, **NOT** to improve a lab grade OR to redo an experiment for which you never submitted a lab report.

## 7. Academic Honesty and/or Cheating

Students are held to the highest expectations and standards regarding honesty in all aspects of the course (taking exams and lab report writing included). Cheating, **including misrepresentation of the work of others as your own**, and **allowing your classmates to copy your work** will not be tolerated. **Students caught cheating will receive a failing (F) grade** for the assignment and/or course. Cases of cheating will also be reported to the College of Arts and Sciences and the University. Please read, understand, and follow the academic policies on Academic Dishonesty: [http://www.drexel.edu/provost/policies/academic\\_dishonesty.asp](http://www.drexel.edu/provost/policies/academic_dishonesty.asp)

## 8. Disability Resources

Students requesting accommodations due to a disability at Drexel University need to present a current Accommodation Verification Letter (AVL) **to one of the CHEM 102 lecturers at least seven (7) days prior to the exam** in order for the accommodations to be made. **Accommodations will NOT be made if the AVL is first provided on the day of the exam. Once submitted, the AVL letter is valid for ALL exams, including the final exam.** AVL's are issued by the Office of Equality and Diversity (OED) - Disability Resources. For additional information, visit the OED website at <http://drexel.edu/oed/disabilityResources/students/> or contact the Office for more information: 215-895-1401 or [disability@drexel.edu](mailto:disability@drexel.edu).

## 9. Add, Drop and Withdrawal Policies

You can **add/drop this course until the end of week 1**:

<http://www.drexel.edu/provost/policies/course-add-drop>

If you add this course after the start of the term, you are responsible for completing ALL work that you may have missed. If you drop this course by the end of week 1, the course will then be removed from your transcript:

**The course withdrawal deadline is Fri, February 23<sup>rd</sup> by 5 PM (i.e., the end of week 7).** If you have any questions about your progress at any time of the term, please contact your corresponding instructors. If you choose to Withdraw, a "W" will be recorded in your transcript:

<http://drexel.edu/provost/policies/course-withdrawal>

## How Will You Learn Chemistry in This Course?

From our past experience, to do well in this course, you must spend at least 2 hours on chemistry for every hour you spend in class (3 hours is recommended). However, the exact time of study needed to be successful really depends on your previous background and personal style of study. **We recommend focusing on successfully completing the homework assignments as we go through the term and only AFTER you read the corresponding lecture notes and/or the textbook. Use the provided review sheets, practice questions and the review sessions organized before each exam. Go through the solved examples in the textbook and through specific questions from the self-assessment quizzes at the end of each chapter. These quizzes are actually extra practice exams.** Don't ignore the extra questions at the end of each chapter. The assignments provided should prepare the "average" student to get the "average" grade. Higher grades require more practice. The more you practice chemistry (for example, by solving problems), the faster you will be able to get through the easy problems on an exam and thus have more time to think about the more difficult ones.

Starting week 2, there is free tutoring (**no appointment necessary**) in **Stratton 106 (schedule to be announced during the first week of the term)**. **Tutors will help you ONLY if you first try to solve the questions by yourself.**

**We wish you much success for the Winter Term '18 at Drexel!**  
**the Drexel CHEM 102 Teaching Team**

**Course Schedule - CHEM 102 - WINTER 2018**

Week	Component	Monday	Tuesday	Wednesday	Thursday	Friday
1	Date	1/8/2018	1/9/2018	1/10/2018	1/11/2018	1/12/2018
	Lecture topic	5.2; 5.7-5.10 (CHEM 101 Review: VSEPR theory; bond & molecular polarity)		21.2-21.4 (alkanes: struct. isomers; nomencl.; <b>no</b> chirality)	21.5 (alkenes, alkynes: isomers; nomencl.)	
	Recitation	Ch. 5: 46(a,b), 50(b,d); 58(a,b,d); Ch. 21: 35, 44b&c; Honors: Ch. 5: 68a; Ch. 21: 46a				
	Lab	No lab this week				
2	Date	1/15/2018	1/16/2018	1/17/2018	1/18/2018	1/19/2018
	Lecture topic	NO CLASSES (MLK day) (aromatic compounds; nomencl.; str. isomers)		21.7-21.10	21.11-21.13; 12.9 (funct. gr.; nomencl. <b>only</b> for alcohols, acids, esters; polymers)	
	Recitation	Ch. 21: 33, 42, 50, 51a&d, 54c&d, 55a&d, 68; Honors: 96				
	Lab	Exp. 5 or 9 (Esters/Chromatography), even-numbered sections (except 66H and 68)				
3	Date	1/22/2018 (MC deadline)	1/23/2018	1/24/2018	1/25/2018	1/26/2018
	Lecture topic	11.2-11.3 (intermolec. forces)		11.5-11.6 (phase changes: <b>no</b> Clausius-Clapeyron eq.)	11.7-11.9 (properties of H <sub>2</sub> O; phase diagrams)	
	Recitation	Ch. 21: 72a&d, 79, 94; Ch. 12: 69, 72; Ch. 11: 36, 42, 44, 46; Honors: Ch. 12: 70				
	Lab	Exp. 5 or 9 (Esters/Chromatography), odd-numbered sections (and 66H, 68)				
4	Date	1/29/2018 (MC deadline)	1/30/2018	1/31/2018	EXAM 1	2/1/2018
	Lecture topic	14.2-14.3 (reaction rate)		14.4-14.5 (orders; rate laws; t <sub>1/2</sub> )	14.6 ( <b>only</b> E <sub>a</sub> ); 14.8 (catalysis)	
	Recitation	Ch. 11: 59, 69, 71, 72; Ch. 14: 27; Honors: Ch. 11: 97				
	Lab	Exp. 6 (Kinetics), even-numbered sections				
5	Date	2/5/2018 (MC deadline)	2/6/2018	2/7/2018	2/8/2018	2/9/2018
	Lecture topic	15.1-15.3 (equil.: def.; K <sub>c</sub> ; related reactions)		15.4-15.6 (K <sub>p</sub> ; heterog. equil. ICE tables)	15.7-15.9 (Q; Le Châtelier pr.; problem-solving)	
	Recitation	Ch. 14: 39, 41, 55; Ch. 15: 22, 33, 73a; Honors: Ch. 15: 23				
	Lab	Exp. 6 (Kinetics), odd-numbered sections				
6	Date	2/12/2018 (MC deadline)	2/13/2018	2/14/2018	EXAM 2	2/15/2018
	Lecture topic	13.2; 13.4-13.5 (solub. & solutions; <b>no</b> Henry's Law; see also 8.2; 8.4 - CHEM 101)		16.1-16.3 (acids & bases: intro)		16.4-16.5 (K <sub>a</sub> & acid strength)
	Recitation	Ch. 15: 46, 47, 56, 71; Ch. 13: 26, 47, 61; Ch. 16: 33, 36; Honors: Ch. 15: 57				
	Lab	Exp. 7 (Titration), even-numbered sections				
7	Date	2/19/2018 (MC deadline)	2/20/2018	2/21/2018	2/22/2018	2/23/2018
	Lecture topic	16.6-16.7 (pH, % ioniz. <b>no</b> acids mixtures)		16.8-16.10 (K <sub>b</sub> ; K <sub>a</sub> -K <sub>b</sub> ; <b>no</b> cations as acids; <b>no</b> calc. for polyprot. acids)		17.1-17.3 (buffers: Henderson eq.)
	Recitation	Ch. 16: 40, 45, 53, 55, 63, 85; Honors: 43				
	Lab	Exp. 7 (Titration), odd-numbered sections				
8	Date	2/26/2018 (MC deadline)	2/27/2018	2/28/2018	EXAM 3	3/1/2018
	Lecture topic	17.4 (titrations; indicators <b>no</b> weak bases w. strong acids)		17.5-17.6 (K <sub>sp</sub> )		18.1-18.4 (entropy)
	Recitation	Ch. 16: 77, 91, 132; Ch. 17: 25, 57a&c, 59; Honors: Ch. 16: 145				
	Lab	Exp. 8 (Solubility product), even-numbered sections				
9	Date	3/5/2018 (MC deadline)	3/6/2018	3/7/2018	3/8/2018	3/9/2018
	Lecture topic	18.5-18.6 (ΔG; spontaneity prediction)		18.7-18.10 (ΔG <sup>o</sup> calc.)	8.9; 19.2 (redox - <b>no</b> acid/base sol.)	
	Recitation	Ch. 17: 83, 92, 93a&b; Ch. 18: 28, 36, 41a&b, 55c; Honors: Ch. 18: 40				
	Lab	Exp. 8 (Solubility product), odd-numbered sections				
10	Date	3/12/2018	3/13/2018	3/14/2018	3/15/2018	3/16/2018
	Lecture topic	19.3 (volt. cells)		19.4-19.5 (stand. electro. pot.; ΔG; E <sup>o</sup> <sub>cell</sub> ; K)		19.6-19.7 (Nernst eq.; batteries)
	Recitation	Ch. 18: 45, 67; Ch. 8: 70; 71; Ch. 19: 40a&b, 49a&b, 57a, 59, 67; Honors: Ch. 19: 70a&b				
	Lab	MAKE UP LAB DAY: Tue, 3/13; 9-5 PM; rooms TBA				
11	Date	3/19/2018 (MC deadline)	3/20/2018	3/21/2018	3/22/2018	3/23/2018
	Lecture	Review				
	Recitation	Make-up MLK day				
FINAL EXAMS WEEK (Tue, 3/20 - Sat, 3/24)						