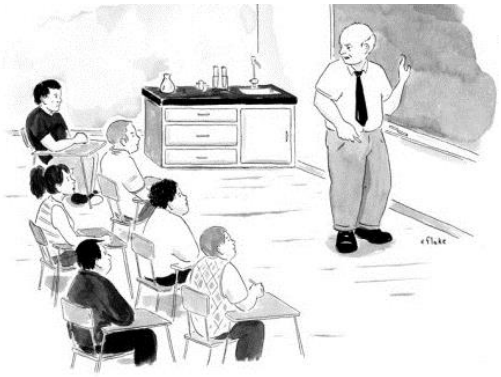
Everyday Chemistry – Fall 2017

Instructor Information:

Dr. Jessica L. Bonjour (formally Menke)
menkej@uww.edu 265 Upham Hall 262-472-1088 (office)

Student Hours: Mon 11-12; Tues 3:15-4:15; Wed 12:45-1:45; Thurs 3:15-4:15; Or by Appointment



"For the hundredth time—I have no idea how to make crystal meth."

Course Meeting Times:

Lecture: Twice a week, Tuesday & Thursday, 2:00 – 3:15 pm in Upham Hall room 145

Course Co-requisites:

Students must have credit for or be enrolled in Math 139, 140, or 141.

Course Materials:

1. Laboratory Manual for General Chemistry, Chemistry 100.
    a. The lab manual packet will contain an access card to the online textbook, "Everyday Chemistry"
2. Scientific calculator capable of performing logarithms, exponentiation, and scientific notation operations.
3. Computer access and a valid Desire to Learn (D2L) log-on.

**You will need access to the textbook and the lab manual no later than 9/11/2017.*

Course Objectives:

A student who successfully completes Chemistry 100 should be able to

1. use basic knowledge of chemistry terminology and concepts to solve conceptual and analytical based chemistry problems. *(lecture quizzes, exams, lab experiments)*
2. use the chemical knowledge learned to critically read current news articles containing scientific material and have an educated basis for dealing with the scientific and technological impact on their lives. *(flex assignments)*
3. use basic laboratory skills and "on your feet" thinking skills to complete a laboratory experiment. *(lab experiments)*
4. develop proper preparative, manipulative, observation, and related computational skills as well as to develop an understanding of the fundamental principles and techniques upon which laboratory experimentation is based. *(lab experiments)*

Because this is a Gen Ed GL (General Laboratory) course, students should also be able to

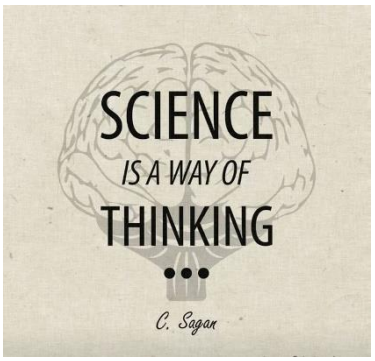
1. use a scientific process to answer a question. *(lab experiments)*
2. critically evaluate scientific data presented in figures, tables, etc. *(flex assignments, lecture quizzes, exams, lab experiments)*
3. When presented with a scientific study, students should be able to
    a. identify various components as appropriate (e.g., hypothesis, predictions, observations, etc.) *(lecture quizzes, exams, lab experiments)*
    b. draw and report conclusions based on the data presented or acquired. *(lecture quizzes, exams,*

lab experiments)

c. evaluate the strengths and weaknesses or limitations of the study. *(flex assignments, lab experiments)*

More broadly, as a Gen Ed course, students will

1. gain ***knowledge of the natural world*** and develop the capacity to apply learning and think in interdisciplinary and integrative ways about the complexity and interconnectedness of the world. *(flex assignments, exams, lab experiments)*
2. improve their ***critical and creative thinking*** skills using strategies to solve problems and answer open-ended questions and draw conclusions from complex information. *(flex assignments, exams, lab experiments)*
3. improve their ***quantitative reasoning skills*** to make judgements and draw appropriate conclusions based on quantitative analysis of data presented in various formats such as graphs and equations. *(flex assignments, lecture quizzes, exams, lab experiments)*
4. become aware of their ***personal and civic responsibility*** with respect to the impact of their own actions on the environment and be able to make informed ethical decisions that respect environmental contexts. *(flex assignments)*
5. Demonstrate ***foundations for life-long learning*** through the use of strategies and skills for self-directed learning, refection on their own learning, and the transfer of knowledge to new contexts. *(exam wrappers, exams)*



General Education Requirements include taking 7-11 credits of GL/GN and/or GM courses. The GL/GN courses you take *will explore phenomena of the natural world in the context of everyday life and contemporary problems. Through a variety of disciplines, these courses will encourage curiosity and appreciation of scientific discovery and inquiry through the examination of scientific processes. You will develop your ability to read and comprehend scientific information and use that information to make judgements and draw appropriate conclusions about its influence on the world around you.* Specifically, as a GL course, CHEM 100 *will include hands-on scientific experimentation in which you will perform scientific processes to collect and/or analyze data to answer scientific questions. You will understand the process of obtaining and evaluating scientific knowledge and how it impacts society and technological growth.*

Workload - It should be noted that this course, as with all laboratory science courses, is time-intensive and will require you to work outside of class for reading, studying, reviewing, and completing assignments. Each week you will be spending 3 hours in lecture and 2 hours in lab. A good rule of thumb is that you should spend at least three hours outside of class for every hour in lecture and 1-2 hours outside of class for every hour in lab. This means you should be prepared to spend at least 10 hours a week outside of class working on the lecture and laboratory. I will do my best to make the information engaging and relevant.

How are you going to spend 10 hours a week on this course?? You'd be surprised how fast it adds up. Before coming to class, print off the skeleton notes from D2L and have them in front of you as you skim through the upcoming chapter. Make any notes or write any questions you might have as you go through the upcoming sections. Having seen the content, even if only briefly, before seeing it in class will make it much easier to understand and retain what is covered. You will have questions on your lecture quiz in D2L pertaining to upcoming chapters. After each lecture, go back and more thoroughly read the chapter and fill in any missing notes. Work through the textbook practice and example problems as you go through each section. At the end of each chapter there are additional problems to work through. To then test yourself, you can take the chapter Self-Test (can earn you flex points). If you miss any questions, go back into the chapter and try to figure out where you went wrong with the problem. If you can't figure it out, come to student hours or ask in lecture. Once you are comfortable with the

material, go to D2L and take the lecture quiz. This is what will be graded. Before an exam, review your notes, work as many additional problems (any textbook problems, in class problems, or additional problems posted to D2L) as you can to prepare. Come to the review session with questions either on specific questions or general topics. You also have labs to work on. Dry labs will be done on your own time based on the schedule. You will complete wet labs during your scheduled lab time. Before coming to wet labs you must read through the lab and complete the wet lab prelab quiz. See how the hours might add up??!??

Course, Departmental, and University Policies:

Academic Misconduct Statement – Don't Cheat!! UWS Chapter 14 identifies procedures to be followed when a student is accused of academic misconduct.

University Policies – The University of Wisconsin-Whitewater is dedicated to a safe, supportive and non-discriminatory learning environment. It is the responsibility of all undergraduate and graduate students to familiarize themselves with University policies regarding Special Accommodations, Misconduct, Religious Beliefs Accommodation, Discrimination and Absence for University Sponsored Events. (For details please refer to the Undergraduate and Graduate Timetables; the "Rights and Responsibilities" section of the Undergraduate Bulletin; the Academic Requirements and Policies and the Facilities and Services sections of the Graduate Bulletin; and the "Student Academic Disciplinary Procedures" [UWS Chapter 14]; and the "Student Nonacademic Disciplinary Procedures" [UWS Chapter 17]).

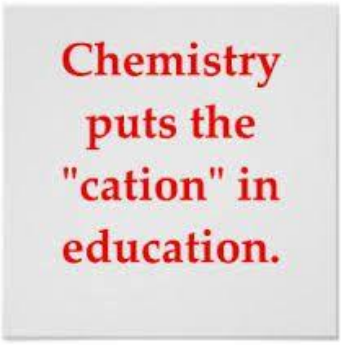
Students Requiring Classroom and Testing Accommodations – If you require accommodation based on a documented condition or disability, please set up an appointment to speak with me during the **first two weeks of class.**

Completing the laboratory on contract – If you have taken Chemistry 100 before and are repeating the lecture part only for a better overall grade, your previous laboratory score can be used in calculating your final grade for this semester. To do this, a special contract needs to be signed. Students taking the lab on contract need to obtain the appropriate signatures and submit the contract to the chemistry department before **Friday, September 8, 2017**.

Pass/Fail (S/NC) – You may enroll in chemistry 100 as a pass/fail student. You still need to check with your advisor if this is an option for you. Please be advised that passing means earning a grade of "C" or better. A "C-" grade is considered failing.

Announcements – Announcements will be made at the beginning of each lecture. These announcements will also be posted on the course D2L site. It is recommended that students regularly check the course website for updates. Announcements may also be sent to the class via your university email address. Students are responsible for any information sent via these two resources.

Communication with Instructor – **Please include CHEM 100 in the subject line of all emails you send!** Many questions are answered most easily in person. I encourage you to come to Student Hours to ask them. However, if you have a question that will only require a brief response, you are welcome to email me. I will respond within 24 hrs during the week and within 48 hrs during the weekend.



Attendance – Attending lectures is highly recommended. If you miss a lecture, it is your responsibility to obtain materials from your peers relating to what was covered in lecture, including announcements, lecture notes, assignments, etc. Any assignments that are going to be missed due to an approved absence are due ***before*** the absence. Approved absences and the course of action for missed quizzes or assignments are listed for the following:

1. *Absence for University Sponsored Events* – Students are responsible for notifying their instructors in advance (minimum 1 week) of their participation in such events.
2. *Religious Beliefs Accommodation* – Students must notify the instructor, in writing, within the first three weeks of the beginning of classes of the specific days or dates on which they will request accommodation from an examination or academic requirement.
3. *Illness or Family Emergency* – If you miss a quiz, assignment, or exam due to an unexpected absence due to a documented illness, family emergency, or other approved absence, the following will be done:
    - You will receive the average score for that category for that particular grade. For example, if you miss a quiz, and your average score on all other quizzes is 80 %, you will receive an 80 % for the missed quiz. You must contact the instructor BEFORE the missed exam, quiz or assignment by email.

Additional notes on lab attendance:

Missed Labs

Students are responsible for all information and assignments missed due to absence for any reason from laboratory. Instructors will **not** give make-up quizzes, lab lectures and labs (Wet or Dry), nor provide notes for missed lab lectures.

Dry Lab

Dry Labs will be available for more than a week. Therefore, Dry Lab D2L quizzes will not be re-opened or extended for any reason. Any forgotten or late Dry Lab will automatically receive a zero. *You get to drop your lowest Dry Lab score.*

Wet Lab

If you miss a Wet Lab for one of the following 3 reasons, you will receive an alternative assignment to make up the missed wet lab points. (1). Religious Beliefs Accommodation, (2). Absence for University Sponsored Events and (3) Documented illness/injury. For reasons (1) and (2), students are responsible for notifying their instructors (at least one week prior to the scheduled lab session). All other reasons for missing a lab will be reviewed on an individual basis. Your laboratory instructor has the sole discretion for determining if you have a valid excuse for missing a Wet Lab, or if you will be given a zero for the missed Wet Lab period. ***You will NOT be able to drop a wet lab. You must complete ALL wet labs!!***

*******Since this is a lab science course, you must receive 70% of the total possible points in the lab in order to receive a passing grade in the course. Missing more than two labs (Wet or Dry, including a dropped Dry Lab), for either excused OR unexcused reasons), will automatically result in failure of the lab and therefore the entire course.**

Assessment:

Exams – Three exams and a comprehensive final will be held this semester based on the following schedule:

Exam I	Thursday, October 5
Exam II	Thursday, November 2
Exam III	Thursday, December 7
Final Exam	(Finals Period) Thursday, December 14, 2:30-4:30

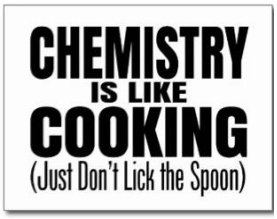
Exams I-III will be worth 125 pts each. They will be based on information covered before that exam. You will drop the lowest of your three scores. The final exam will be fully comprehensive and worth 100 pts. The final exam cannot be dropped.

Exam Wrappers – After the first three exams, you will complete a self-evaluation "Exam Wrapper." This assignment will help you reflect on how you did, how your study habits did or did not help you be successful on the exam, and determine how you can improve for the next exam. Each exam wrapper will be worth 10 points. You cannot drop an exam wrapper! Exam wrapper forms are on the D2L Content page. You will complete the form and upload it to the D2L dropbox by the due date. See the course schedule for due dates.

D2L Lecture Quizzes – There will be 13 lecture quizzes (LQ#) given in D2L. These quizzes will contain questions that come from the reading you are to complete for the upcoming week as well as questions from the material we covered in lecture the previous week. These lecture quizzes will always be due by 11:59 pm on Mondays. See the schedule for exact dates. Each lecture quiz will be worth 10 points. You will be able to drop your lowest lecture quiz score. After the due date, you can access the lecture quiz to see the correct answers. You will not be allowed to make up lecture quizzes unless you are out of town for the full open period of the lecture quiz due to an excused absence (preapproved by instructor). **Lecture quizzes will not be reopened after the due date for any reason.**

Flex Assignments – Throughout the semester, you will have the opportunity to complete several different assignments. Flex assignments will be worth 100 points. You can earn up to an additional 25 points for extra credit. The different opportunities, details and due dates can be found on D2L. Additional opportunities may arise throughout the semester, but that is not guaranteed. Some opportunities will occur in class, worth 1-5 points each while out of class opportunities are typically worth 5-10 points each. A running tally of points will be posted to D2L. Details of each assignment's points will be kept by the instructor.

Laboratory – The laboratory is an essential component of this class. In order to pass Chemistry 100, a laboratory score of a C- (70 %) or greater is required. While the laboratory is taught by different instructors, we will do our best to be consistent with the material covered and the grading of the assignments. If there is a discrepancy in the final laboratory grades between sections, I reserve the right to normalize the grades. Please see the laboratory syllabus for additional information regarding the lab portion of the course. Lab will be worth a total of 200 points.



Dry Labs

The laboratory portion of this course is divided into two parts: Dry Labs and Wet Labs. Dry Labs will be completed on your own time sometime during the scheduled week. You can complete it at your convenience, anytime, anywhere as long as the **D2L Quiz** portion is submitted by the deadline. See the schedule and your lab manual for additional details on each Dry Lab. Dry Labs are worth **15 points** each. You can take the D2L quizzes 2 times. You will receive the average score of your two attempts. (Dry Lab 1 is slightly different. Please see the lab manual for details.) *You will be able to drop your lowest Dry Lab score.*

Wet Labs

Pre-Lab Quizzes

For Wet Labs, you must complete the **pre-lab D2L quiz before coming to lab**. These quizzes are based on the information provided in your lab manual for each Wet Lab. Be sure to read through the introduction and the procedure before taking the quiz. Quizzes will open at the end of your previous Wet Lab and are due at the time the current Wet Lab starts. These quizzes will not be reopened for any reason. They are worth **5 points** each. You can take the D2L quizzes 2 times. You will receive the average score of your two attempts. *You will be able to drop one pre lab quiz.*

Wet Lab Reports

You must attend your scheduled lab section during weeks of Wet Labs. The experiments will be completed during the lab period. You will also complete a report form for each experiment that is due by the end of your lab period. Wet Labs are worth **15 points** each. ***You will NOT be able to drop a wet lab report. You must complete ALL wet labs!!***

Be on Time and Come Prepared:

There are **10 points** included in your grade for arriving to lab on time and prepared. If you arrive late to lab or are clearly unprepared, your lab instructor will deduct 2 points from these 10 points if you at least arrive during the prelab lecture (a brief lecture given at the start of each Wet Lab to introduce the lab and describe experiment modifications and use of special equipment or techniques). If you arrive after the pre-lab lecture is complete, you may not be allowed to do the experiment and may receive a ZERO for that experiment.

Point Breakdown

Exams	250 points
Exam Wrappers	30 points
Lecture Quizzes	120 points
Laboratory	200 points
Flex Assignments	100 points
Total possible	700 points

Details of lab points:

Dry Labs	15 pts each	6 labs total	1 drop	75 pts total
Wet Labs	15 pts each	6 labs total	0 drops	90 pts total
Wet Pre-Lab Quizzes	5 pts each	6 quizzes total	1 drop	25 pts total
Arrive on time & prepared (Wet labs)	2 pts each	6 labs total	0 drops	10 pts total
Laboratory Total				200 pts

Grading Scale:

Here is the grading scale that indicates the highest cutoffs for each letter grade. I may lower the cutoffs if I feel this scale does not fully represent the efforts you have put forth in the course, but they will not be raised. For example, if you receive 92 % of the total points, you are guaranteed and A.

Percent	Letter Grade	Percent	Letter Grade	Percent	Letter Grade
92-100	A	80-81	B-	68-69	D+
90-91	A-	78-79	C+	62-67	D
88-89	B+	72-77	C	60-61	D-
82-87	B	70-71	C-	0-59	F

THINK LIKE A PROTON

ALWAYS POSITIVE

Many of you will have struggled with math and/or science at some point in your life. It may have been an experience that really affected your confidence. You may feel like you are "not good at math and/or science" or you are "scared" of it. Please understand that you are now at a new phase in your life and will be able to see the material in a new light. You will likely have more math and science ability than you had thought. Know that, with the right strategies and support, you can succeed in this class. Once you have, think: If I can do this, what else can I do?

Do the best you can until you know better. Then when you know better, do better.

- Maya Angelou

Course Schedule (Tentative)

CHEM 100 Fall 2017 Tentative Schedule			
Week Of:			Due Date
4-Sep	Lecture	Thursday - Intro to Course	9/7
	Lecture Q	None	
	Lab	None	
	Flex	Day 1 Information Sheet	Due in class
11-Sep	Lecture	Tuesday - Chapter 1; Thursday - Chapter 2 (1)	9/12, 9/14
	Lecture Q	**LQ1** - Pre Chapters 1 and 2 (4)^	9/11, 11:59 pm
	Lab	Orientation Lab during scheduled lab time, bring lab manual	
		Dry Lab 1* complete on your own time (5, 2, 4)	9/15, 11:59 pm
	Flex	Cell Phone Flex (2,3)	9/14, 11:59 pm
18-Sep	Lecture	Tuesday - Chapter 3; Thursday - Chapter 3 Con't (1)	9/19, 9/21
	Lecture Q	**LQ2** - Pre Chapter 3, Post Chapters 1 and 2 (4)^	9/18, 11:59 pm
	Lab	**Wet Lab 1 Pre-Quiz** (4, 5)	**
		Attend your lab section, **Wet Lab 1** (5)	
	Flex	Self-Tests Chapter 1 and Chapter 2 (1)	9/18, 11:59 pm
		PEACE Documentary 1, 9/18, 5 pm, Summers	
		PEACE Documentary 1 summary (2,4)	9/21, 11:59 pm
25-Sep	Lecture	Tuesday - Chapter 4; Thursday - Chapter 4 Con't (1)	9/26, 9/28
	Lecture Q	**LQ3** - Pre Chapter 4, Post Chapter 3 (4)^	9/25, 11:59 pm
	Lab	**Dry Lab 2*** (5, 2, 4)	9/29, 11:59 pm
	Flex	Self-Test Chapter 3 (1)	9/25, 11:59 pm
		Article Summaries 1 (2, 3)	9/28, 11:59 pm

2-Oct	Lecture	Tuesday - Review; Thursday **Exam 1**	10/3, 10/5
	Lecture Q	**LQ4** - Post Chapter 4 and Review (4)^	10/2, 11:59 pm
	Lab	**Wet Lab 2 Pre-Quiz** (4, 5)	**
		Attend your lab section, **Wet Lab 2** (5)	
	Flex	Self-Test Chapter 4 (1)	10/2, 11:59 pm
		Chemistry is Pun (2, 3)	10/3, 11:59 pm
9-Oct	Lecture	Tuesday - Chapter 5; Thursday - Chapter 5 Con't & Chapter 6	10/10, 10/12
	Lecture Q	**LQ5** - Pre Chapters 5 & 6^	10/9, 11:59 pm
	Wrapper	**Exam 1 Wrapper** (2, 3)	10/12
	Lab	**Dry Lab 3*** (5, 2, 4)	10/13, 11:59 pm
	Flex	Science in 2017 (2, 3)	10/12, 11:59 pm
16-Oct	Lecture	Tuesday - Chapter 6 Con't; Thursday - Chapter 6 Con't & Ch 7	10/17, 10/19
	Lecture Q	**LQ6** - Pre/Post Chapter 6, Pre Chapter 7 (4)^	10/16, 11:59 pm
	Lab	**Wet Lab 3 Pre-Quiz** (4, 5)	**
		Attend your lab section, **Wet Lab 3** (5)	
	Flex	Self-test Chapter 5 (1)	10/16, 11:59 pm
23-Oct	Lecture	Tuesday - Chapter 7 Con't; Thursday - Chapter 7 Con't	10/24, 10/26
	Lecture Q	**LQ7** - Pre/Post Chapter 7 (4)^	10/23, 11:59 pm
	Lab	**Dry Lab 4*** (5, 2, 4)	10/27, 11:59 pm
	Flex	Self-Test Chapter 6 (1)	10/23, 11:59 pm
		Article Summaries 2 (2, 3)	10/26, 11:59 pm
30-Oct	Lecture	Tuesday - Review; Thursday - **Exam 2**	10/31, 11/2
	Lecture Q	**LQ8** - Post Chapter 7 and Review (4)^	10/30, 11:59 pm
	Lab	**Wet Lab 4 Pre-Quiz** (4, 5)	**
		Attend your lab section, **Wet Lab 4** (5)	
	Flex	Self-Test Chapter 7 (1)	10/30, 11:59 pm
		L&S Lecture 10/30, 7 pm, Young Aut	
		L&S Lecture Summary (2, 4)	11/2; 11:59 pm
6-Nov	Lecture	Tuesday - Chapter 8; Thursday - Chapter 8 Con't	11/7, 11/9
	Lecture Q	**LQ9** - Pre Chapter 8 (4)^	11/6, 11:59 pm
	Wrapper	**Exam 2 Wrapper** (2, 3)	11/9
	Lab	**Dry Lab 5*** (5, 2, 4)	11/10, 11:59 pm
	Flex	None scheduled	
13-Nov	Lecture	Tuesday - Chapter 8 Con't; Thursday - Chapter 9	11/14, 11/16
	Lectue Q	**LQ10** - Pre Chapter 9 and Post Chapter 8 (4)^	11/13, 11:59 pm
	Lab	**Wet Lab 5 Pre-Quiz** (4, 5)	**
		Attend your lab section, **Wet Lab 5** (5)	
	Flex	Article Summaries 3 (2, 3)	11/16, 11:59 pm
20-Nov	Lecture	Tuesday - Chapter 10; Thursday - No Class	11/21, 11/23
	Lecture Q	**LQ11** - Pre Chapter 10 and Post Chapter 9 (4)^	11/20, 11:59 pm
	Lab	No Lab	
	Flex	Self-Test Chapters 8 and 9	11/20, 11:59 pm
		Chemistry Videos (2, 3)	11/21, 11:49 pm

27-Nov	Lecture	Tuesday - Chapter 10 Con't & Ch 11; Thursday - Ch 11 Con't	11/28, 11:59 pm
	Lecture Q	**LQ12** - Pre Chapter 11 and Post Chapter 10^	11/27, 11:59 pm
	Lab	**Dry Lab 6*** (5, 2, 4)	12/1, 11:59 pm
	Flex	L&S Lecture 11/27, 7 pm, Young Aut.	
		L&S Lectue Summary (2, 4)	11/30, 11:59 pm
4-Dec	Lecture	Tuesday -Review; Thursday - **Exam 3**	12/5, 12/7
	Lecture Q	**LQ13** - Post Chapter 11^	12/4, 11:59 pm
	Lab	**Wet Lab 6 Pre-Quiz** (4, 5)	**
		Attend your lab section, **Wet Lab 6** (5)	
	Flex	Self-Test Chapters 10 and 11	12/4, 11:59 pm
		#ChemInMyLife Selfies (2, 3)	12/7, 11:59 pm
		PEACE Documentary 2, 12/4, 5 pm, Summers	
		PEACE Documentary 2 summary (2,4)	10/7, 11:59 pm
11-Dec	Lecture	Tuesday - Review; Thursday - **Final Exam**	12/12, 12/14
	Lecture Q	None	
	Wrapper	**Exam 3 Wrapper** (2, 3)	12/12
	Lab	No Lab	
	Flex	End of Semester Letter (2, 3)	12/14, 2:30 pm
1 textbook; 2 D2L content; 3 D2L dropbox; 4 D2L quiz; 5 lab manual			
^Lecture quizzes open 5 am Monday the previous week *Dry labs open 5 pm Thursday the previous week; **Complete prelab quiz before going to your lab section			

Everyday Chemistry Chapter Titles

Chapter 1 – Science in Your Life…or Not?
Chapter 2 – What is Chemistry?
Chapter 3 – The Numbers of Science
Chapter 4 – The Building Blocks of the World – The Atom
Chapter 5 – Let's Build Houses! Compounds and Molecules
Chapter 6 – Opposites Attract – Ionic Bonding
Chapter 7 – Sharing is Caring – Covalent Bonding
Chapter 8 – As Simple as H and C – Hydrocarbons
Chapter 9 – Let's Add some Personality! – Functionalized Hydrocarbons
Chapter 10 – The Many Quirks of H_2O
Chapter 11 – Sour or Bitter? Acids and Bases