CHEM 31D - General Chemistry I - Fall 2016
Prof. Willem R. Leenstra

Lectures on MWF 2:20-3:10 PM, in Marsh Life Science 235
Exams/Reviews: Tuesdays 7:35-9:35 PM, in MLS 235

Contact Information

Office Location: Cook Physical Science Building A-119
E-mail Address: willem.leenstra@uvm.edu
Office Phone: (802) 656-0273

General

Professor's Office Hours: I have tentatively chosen Mondays, Tuesdays, and Wednesdays, 3:30-4:30 for regular office hours. These times straddle the class-meetings patterns, thereby increasing the probability that you will have a free chunk of time to come see me. As I gather information about how convenient these times are for you, these office hour times may change. If you need to see me outside of the office hours for an urgent matter, we can set up an appointment at another, mutually convenient time. Also, occasionally I will have a conflict that prevents me from being in my office at the posted time; if so, just contact me with a request to see me individually preferably by phone, and we'll make it happen as soon as possible. Leave me your cell to call back, if I'm not picking up, rather than emailing back and forth.

Teaching Assistants' Office Hours: Each Teaching Assistant who is part of Chem 31 will have one office hour per lab that he/she teaches. Since there are 50 lab sections of Chem 31 offered throughout the week, there will be full-time coverage of office hours throughout the week, at which you can receive help. The General Chemistry TA table is in Cook room A-302. During this office hour, the TA will answer questions not only about the lab, but also about the lecture material. The schedule of these hours will be publicized on Blackboard, our course communication platform, in the near future. ***You may utilize ANY of the TA's for help with lab or lecture questions - don't rely on just your lab TA.***

Supplemental Instruction (SI): There will be additional course help available through the Supplemental Instruction program. Two SI Leaders, Marissa Dennis and Hillary Danis, will be working together to hold three review sessions during the week, at which they will go over problems related to lecture material. When details about the specific times/places become available, they will be posted on the web (we use Blackboard as the course web site).

Extended Office Hours: As you know, the Tuesday evening time slot is specifically reserved for our four exams during the semester. One way to use the rest of those Tuesday evening times will be to hold occasional review sessions, mostly focused on doing problems to complement the lectures (which are designed to discuss the concepts). I will only keep holding these if there is demand for them; if only a handful of people show up, we'll go back to using only the regular office hours and appointments. These recitation/review sessions will be held in Cook A-305 (subject to change, but definitely not the large lecture/exam room MLS 235), 7:30-8:30 PM, starting in week 3.

Communication: I will use postings on Blackboard (bb.uvm.edu) and class-email throughout the semester to publicize important information. Blackboard is a course management system where you will find class announcements, this syllabus with updates, lecture notes, sample exams, homework assignments, and a record of your grades as they are earned. You are responsible for checking these communication channels at least once

per day. As I said above, I prefer a phone call to me directly instead of exchanging many emails so please try that route first. Leave a contact phone number if I happen to not be in my office.

Lecture Component

Course Textbook: We will be using a new textbook this year, "Chemistry – an atoms-focused approach", by Gilbert, Kirss, and Foster, in its first edition. We were able to negotiate a special arrangement with the publisher, Norton. Instead of your having to buy a huge book for the entire year of General Chemistry (31 and 32), the UVM Bookstore now sells the Chem 31 portion in the fall, and the Chem 32 portion in the spring. For those who won't be going on to Chem 32 it means that you will save about 50%, and for those who will go on to take Chem 32, you can spread your costs out over the two semesters.

The Chem 31 course packet costs $120 at the Bookstore, and consists of the following:

- A soft-cover textbook containing the first 10 chapters of the book "Chemistry – An Atoms-First Approach" authored by Gilbert, Kirss, and Foster, and published by Norton. (CHEM 32 will have a similar soft-cover textbook covering chapters 11 and on.)
- The Student Solutions Manual containing worked-out answers to end-of-chapter problems of the first 10 chapters.
- An Access Code that allows you to use SmartWork, which houses an electronic version of the textbook, as well as a program through which you can do the homework online, and through which you have to take regular quizzes that count towards your final grade. For this program you will need to use the course code CHEMAT10878 (case-sensitive). You can start right away exploring all of this tool's capabilities.

If you prefer to go paperless, electronic-only, you can do one of the following directly through Norton:

- If you want to use just the e-book and SmartWork, it costs $67.10 when purchased at: http://books.wwnorton.com/books/webad.aspx?id=4294986184 (or at the website in #2). This option contains all of the chapters of CHEM 31 and CHEM 32, and gives you access to the e-book for 720 days and SmartWork for four semesters.
- You can also purchase access to SmartWork without the e-book for $25 for one semester. To do so, go to http://books.wwnorton.com/books/smartwork.aspx, click on Purchase SmartWork (in the Students section). Next select your book "Chemistry - An Atoms Focused Approach", and then choose your option: either (1) $25 for no e-book and only one semester of access, or (2) $67.10 for the e-book with SmartWork as was described above as well. Finally, the Solutions Manual will be made available via the course website, Blackboard.

Class Notes: The lectures will be used principally to introduce and explain new material. This sometimes includes working out numerical problems, but going over the assigned homework problems is not the purpose of the lectures (see HW, below, and Help Sessions, above). I will post copies of my actual class notes on Blackboard after each lecture. These are very detailed, and written out – not just skeleton outlines. You can thus choose to take notes during lecture, or just listen and absorb. But please, do not interpret my extra effort of posting these notes as an excuse for not attending lecture. There is no substitute for hearing someone explain the many, diverse, and difficult concepts you'll encounter in this course.

Schedule: The tentative outline of material covered in each lecture is shown in the following table. This schedule may be off a day or so in either direction.

#	Date	Chapter		#	Date	Chapter		#	Date	Chapter
1	8/29	syllabus		15	10/3	5		28	11/4	8
2	8/31	1		16	10/5	5		29	11/7	8
3	9/2	2		17	10/7	6		30	11/9	9
4	9/7	2		18	10/12	6		31	11/11	9
5	9/9	3		19	10/14	6		32	11/14	9
6	9/12	3		20	10/17	6		33	11/16	9
7	9/14	3		21	10/19	7		34	11/18	9
8	9/16	3		22	10/21	7		35	11/28	10
9	9/19	4		23	10/24	7		36	11/30	10
10	9/21	4		24	10/26	7		37	12/2	10
11	9/23	4		25	10/28	7		38	12/5	10
12	9/26	4		26	10/31	8		39	12/7	review
13	9/28	5		27	11/2	8		40	12/9	review
14	9/30	5								

Homework: First of all, on Blackboard, under the "Suggested EOC HW" tab, you will find 20-30 end-of-chapter problems which I have chosen as being representative of the chapter's content. Clearly you can add to that list if you feel like you need more practice. Since you should have the Solutions Manual, doing the problems is a painless way of deepening your familiarity with the material. For obvious reasons, homework will not be graded. I will also post this list on SmartWork so that you can't miss the point that, while not graded, I consider working the end-of-chapter problems to be a real homework assignment.

Getting the right answers for the assigned homework problems is certainly one way to assess your mastery of the content of each chapter. But you really should think of "homework" as a more encompassing task than just doing problems. It includes following parts: (1) read the textbook ahead of the material covered in class; (2) review the material within a day of having had it presented in lecture but before the next class; (3) use SmartWork tutorials to practice and refine your problem-working skills; (4) do the end-of-chapter HW, and use the Solutions Manual to understand each step in getting to the answer; don't memorize procedures because it won't stick.

Quizzes: At the end of the last lecture during which a particular chapter is discussed, I will open up a Quiz, administered via SmartWork, which comprises 10 problems, each worth 1 point. For many of these, the actual input values you get will be randomly generated so that everyone gets different answers. The SmartWork software grades each question based on a protocol that assigns value on how much help you need in the form of hints, etc. These quizzes are open-book, and I don't mind if you work with others on understanding the relevant concepts, and how to attack problems. However, filling in an answer that was almost entirely obtained by someone other than yourself constitutes cheating. There are 10 chapters, therefore 10 quizzes, for a total of 100 possible points that you can earn towards your course grade.

Semester Exams: Four exams, worth 100 points each, will be given on Tuesday evenings, from 7:35 PM till 9:35 PM. They are designed to be one-hour exams, but you can take the full two hours if you like. Your lowest exam score from the first three will be dropped; this way you will not be penalized if you are having a slow start to the course. Our assigned examinations room is Marsh Life Science 235. I will not answer any material questions on examination days.

We will be crowded, but the half-dozen proctors will keep everyone honest. Put away all cell phones, iPods, etc. No papers are to be in your vicinity. The only calculator that is allowed to be used is the simple scientific type (non-graphing), like the Sharp Model EL-501 that is for sale in the UVM Bookstore for less than $10. We have had unpleasant cheating incidents with graphing calculators in the past, so there will be no exceptions granted. In general, offenses against the Code of Academic Integrity are not tolerated. Any suspected violations of the Code are taken very seriously and will be forwarded to the Center for Student Ethics and Standards (more details can be found at their website www.uvm.edu/cses).

The Tuesday evening exams will cover material up to and including the previous Friday's lecture (but I will reserve the right to occasionally include material from the preceding Monday if there is a more natural break in the content). We will take them in Marsh Life Science 235. They will occur at approximately equal intervals on the following days:

Exam 1 — September 20 (8 Lectures: 1-8)
Exam 2 — October 11 (9 Lectures: 9-17)
Exam 3 — November 1 (8 Lectures: 18-25)
Exam 4 — November 29 (9 Lectures: 26-34)

I will not give make-up exams. If you miss an exam for illness or any other reason, your zero will be thrown out as your lowest score. If your illness is of an extremely serious nature, you may get individual dispensation, but we must have a private, face-to-face conversation in my office before the exam in order for you to receive any consideration. If you have a bona fide, serious conflict with the time for a particular exam, you must contact me prior to the exam day to get my permission to take it at another time. [You must furnish me with contact information such as, for example, your coach, lawyer, parole officer, etc. so I can verify your request. If you work in the evenings, it is your responsibility to reschedule with your supervisor right away.] The exams will be returned to you in your laboratory the following week. If you want it sooner than your lab meeting, you must contact your TA first and arrange a pick-up time that is convenient for the both of you.

Final Exam: The Final Exam is comprehensive, counts for 200 points, and will be a multiple-choice format. The entire Final Exam is designed to be a two-hour test. Our Final will be given on Monday, December 12 at 2:00 PM in your lecture room, MLS 235. ***Please make your travel arrangements now, with this obligation in mind.***

Attendance: During the lecture, the concepts are being presented in a different way from how you probably were reading/studying them in the textbook. Thus, coming to lecture and absorbing the material is enormously important. Logistically, I cannot take attendance, however, I can also tell you that in the past when I did administer attendance quizzes, I found, as one would expect, that there is a very strong correlation between attendance and grade earned. I don't give any "extra credit projects" with which you can enhance your grade. However, at various times during the semester I may give unannounced quizzes for which you can earn a few points. These points could help you get over a grade border if you are just below it!

Course Withdrawal: The last day to withdraw from the course with a W is Monday, October 31. This is the day before Exam 3, so you will have had 2 exams by then, giving you a good idea of where you stand. (Along these same lines, course add/drop must be done by Monday, September 12.)

Course Grade

Categories: The entire course will be graded on 1000 points that you are able to garner from lecture (800 points) and from lab (200 points). You can earn the 1000 points as follows:

1) Four exams at 100 points (drop the lowest of the first three), for a total of	300 points
2) One final exam valued at 200 points, for a total of	200 points
3) Ten graded quizzes at 10 points each, for a total of	100 points

---

These 600 points from exams will be multiplied by 4/3, to generate a possible	800 points
4) The lab score (details to be posted) can generate a possible	200 points
Thus, the total points score possible for the entire course is	1000 points

Grading Scale: Assuming a large sample and a Gaussian distribution of scores, I am assigning the average grade to be a C+. Using last year's Chem 31 results as an example, out of 1000 points, the average score was almost exactly 700. Grade cutoffs will come at approximately equal intervals from the average; the range for each grade category is 40 points. Thus, the range 680-720 is assigned as a C+.

above the average		*below the average*	
range	grade	range	grade
680-720	C+	640-680	C
720-760	B-	600-640	C-
760-800	B	560-600	D+
800-840	B+	520-560	D
840-880	A-	480-520	D-
>880	A	<520	F

If the average is higher, the whole class benefits with more high grades. If the average is lower than 700, I will add whatever number of points are required to bring the class average up to 700 (i.e., "scaling"). That is, every student gets that number of points to bring you up to the "scale" above. The ultimate grading scheme that will be used will be constructed after the Final has been graded, and all lab grades are in. Your scores will be posted on Blackboard.