Instructor: Prof. Rory Waterman
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Lecture: TR 10:00 11:15, Angell B-106

Office hours: M 11:30 2:00 pm and T 1:30 3:00 pm. My office hours are your time. You do not need an appointment. If you can not make those times, feel free to make an appointment.

Course description: The first half a two-semester sequence that covers topics of import to all of chemistry (and many other sciences) including atomic structure, bonding, mass balance, gases, thermodynamics, quantum mechanics, and basic reactivity.

Text: *Chemistry: A Molecular Approach* (

Below is a list of key skills/objectives for the course. Please keep these in mind as you proceed through the semester.

Apply a scientific way of thinking to solving problems.
Use the periodic table as a predictor of chemical and physical properties.
Manipulate known relationships to predict chemical or physical properties.
Use chemical information to solve problems.
Demonstrate proficiency in simple laboratory manipulations.
Express data clearly and accurately while in the correct unit of measure.
Apply the mole concept to reactions.
Balance chemical reactions.
Apply various theories (bonding, gases, thermodynamics, etc.) from class to problems.

specific class for credit, and occasionally credit will be awarded for some problems

of your course grade.

I will also post practice problems of my own design on Blackboard for practice routinely.

Laboratory: A weekly laboratory section is also included in the course, and your work in that section (reports, quizzes, etc.) comprises 25% of your course grade. Most students were initially scheduled into a laboratory section. You can change your laboratory section at MyUVM to another section with space (fewer than 22 students enrolled) before August 29.

Laboratory experiments begin in the second week of classes (starting Monday, September 8).

Attendance Attending the lab section you are registered for is mandatory. Make-up labs will be given only for documented, university-approved reasons and only during the same week of k

highly flammable. Finally, you will handle potentially dangerous chemicals. Beside the personal risk, you can also potentially damage your clothing.

Lab Notebook
notebooks can be obtained at the bookstore. All data must be recorded in ink.

Demonstration Videos The Department produced videos detailing the operations for each experiment of the semester (uvm.edu/~chem/?Page=31Videos.html). By taking several minutes to watch each video before the corresponding experiment, you will be prepared to quickly execute your experiment in a safe and correct fashion. This is an additional, free resource to help you.

Go to lab prepared: Read the experiment, watch the demonstration videos on line, prepare your lab notebook, and dress for the occasion (no open toe shoes, tie back long hair, etc.). If you spend a little time preparing for the lab, you will complete the experiments faster, obtain better results, and perform better in the course.

Grading Each experiment will be graded in four parts: notebook/prelab (~20%), Lab report (~45%), and quizzes (~35%). Students typically average ~80% on the laboratory component of CHEM 31.

Laboratory schedule Below is the expected schedule of laboratory experiments, starting the week of September 13.

Dates	Experiment	Description
Sept. 8 12	1	A. Laboratory Safety B. Density
Sept. 15 19	2	Determination of a Chemical Formula
Sept. 22 26	3	Mole Ratio
Sept. 29 Oct. 3	4	Acid Content of a Food Product
Oct. 6 10	5	Gas Law Determination of Molecular Weight
Oct. 13 17	6	Heat Capacity of a Calorimeter
Oct. 20 24	7	Heat of Formation
Oct. 27 31	8	Emission Spectra of Metals
Nov. 3 7/10 14	9	Qualitative Analysis
Nov. 24 28	10	Flame Emission Spectra of Metals
Nov. 26 30	No Labs	Thanksgiving break

Sources of help
There is a team of people ready and willing to help you understand the course material and help you better to use that information to solve problems. Take advantage of these resources.

The professor I am more than the person at the front of B-106 I have a vested interest in seeing you understand the material. My office hours are listed above and if those times are inconvenient, I am glad to schedule appointments. You can also reach me by e-mail or phone with your questions. It is often very convenient to take couple of minutes after class to ask

questions as well. I would like you to feel like I am an accessible resource for you to understand the course material.

The teaching assistants You will have a teaching assistant (TA) in charge of your laboratory section. This is and _____. This TA will be a great resource to you including soon-to-be scheduled office hours. A