

CHE 107: Principles of Chemistry

Course syllabus and policies

Fall 2009

MTWF 11:30 – 12:20 pm

Nobel Hall room 201

Dr. Brandy Russell
205A Nobel Hall
933-6160
brussell@gustavus.edu

Required materials:

Textbook: General Chemistry: The Essential Concepts, 5th Edition, Chang, McGraw Hill

ARIS: You are required to have an account with ARIS. Codes are sold bundled with textbooks in the Book Mark or can be purchased online if you bought a used textbook.

Calculator: Any brand, but it must do logarithms and exponentials (and you must know how to use it!). Bring it to class every day.

Lab supplies: Safety glasses/goggles, bound carbon-copy lab notebook, and lab packet, all available from the Book Mark. (If you are in Discovery lab, there is a different lab packet to be distributed on the first day of class.)

Online resources:

www.mharis.com: This is where you do homework assignments and view homework grades.

moodle.gac.edu: This is where you can find all other course and lab information and handouts.

Contacting me: I believe that any Gustavus student can do well in this class. One of my favorite parts of this job is helping students one-on-one or in small groups, so please come see me!

My office hours are Tuesday 12:40 – 1:20 pm*, Wednesday 9:00 – 10:00 am, and Thursday 1:00 – 2:00 pm. If you cannot get to my office hours, the best thing to do is to email me with some of your free hours so we can make an appointment. You are also very welcome to drop by my office; if I am not tied up with other obligations, I am happy to meet with you without an appointment. Please note that the hour before class is NOT a good time to meet with me.

* My Tuesday office hours will be held in the Diversity Center in the lower level of the campus center, room 107. After class on Tuesdays, I will grab lunch to go at the caf and then head down to the D-Center. All students are welcome in the D-Center.

About this course: Principles of Chemistry is an introductory chemistry course. This course provides a basic understanding of key chemistry principles for both the students who will continue in chemistry and those who will never take another chemistry course. The course therefore focuses on basic principles for the well-informed citizen, but also must prepare students for upper-level coursework. Laboratory work is coordinated with lecture and is intended to illustrate principles and develop experimental skills.

This course is taught in several sections, each led by a different professor. We all use the same textbook, online homework system and laboratory program, and similar syllabi. The exact material covered may vary somewhat from section to section, as will exams, grading systems, and course policies.

Class time: If you want to succeed in this class, the first thing to do is to show up every day. Although there is not a portion of your grade allotted to attendance, you will be responsible for all material covered during the class period, even though not all class material is fully described in the textbook.

When you come to class, I expect that you are there to participate and learn. You must bring a writing implement, paper, and a calculator to class every day. I frequently ask the class to follow along with calculations done on the chalkboard or to try problems individually or in groups. I do this because students learn better when they actually *do* the problems, rather than just copying. I will be calling on random students for calculator results. Be ready!

Finally, students with their attention diverted by checking caller ID on their cell phones, text messaging, or reading non-class materials learn little chemistry. Also, please respect the others in the room by ensuring that none of your electronic devices will make noise during class.

Homework: Online homework assignments will be given nearly every week—you need to check ARIS regularly to keep on top of this! Homework assignments will be accepted until 5:00 pm on the due date. In general, late assignments will not be scored. You can still complete the assignments online for your benefit. Regardless of the direct impact on your grade, mastering the material included on the homework assignments is the best way to learn the subject matter and do well on the exams. If you are unable to turn in a homework assignment on time, you may request an extension *one time* (send me an email to request it).

Quizzes: There will be 6 quizzes (see last page for dates). Quizzes will take 10 – 30 minutes and may be held in class or on the course Moodle site. In general, missed quizzes cannot be made up and will result in a score of zero. For extenuating circumstances, contact me. Simply forgetting to take an online quiz is *not* considered an extenuating circumstance. Your lowest quiz score will be dropped in the final grade calculation.

Exams: There will be 4 one-hour exams and one final exam (see last page for dates). These will contain multiple-choice, short-answer, and problem-based questions and will test your understanding of material covered in lecture and laboratory. Exams will primarily test material covered since the last exam, but also may include earlier material.

I expect you to take your exam on the day scheduled, and at the time scheduled. If circumstances make it *necessary* for you to miss an exam, notify me as soon as possible *prior* to the exam date so we can schedule a make-up exam. There is no guarantee that the make-up exam will have similar content, format, and/or level of difficulty than the in-class exam. If you miss an exam without notifying me in advance you risk grading penalties, including earning a zero on that exam. If you must miss an exam, I will ask for confirmation of your reason for missing the exam. Please do not be offended; I require this of everyone.

You must bring your own calculator to each exam. Sharing of calculators is not allowed, and using calculator programs on communication devices such as cellular phones is likewise prohibited. Any potentially useful information programmed by the student into a calculator constitutes academic dishonesty. Ask me if you are unsure if a program you have on your calculator is allowed. If you forget your calculator on exam day, there is some chance I will be able to find a calculator that you may borrow, but there is no guarantee that one will be available or that the calculator I have will be familiar to you. Otherwise, you may elect to take the exam without a calculator, or if you have not yet begun the exam, you may return to your residence to get your calculator (no time extensions will be given).

The final exam will be cumulative and will be held in our regular classroom. The date and time have been set by the registrar: Monday, December 21st, 3:30 – 5:30 pm. Please note that this is the very

last time period for final exams and keep this in mind when you and your family make travel plans for the break. Alternate final exam times will be given only for illness, family emergencies, Gustavus-sponsored events, or for students with three exams on the same day.

Laboratory: You are required to attend all laboratory sessions. If you have specific concerns relating to the laboratory, please speak with your laboratory instructor. Most of the laboratory sections share a common lab manual, experiment schedule, and attendance policy, except Discovery Lab (which meets Wednesdays at 1:30 pm). Whichever section you are registered for, the laboratory program complements the lecture and you must pass both lab and lecture to receive a passing grade. Thus, even though the lab component counts 20% of your grade, if you fail this portion you will receive an overall grade of “F” for the course.

A note to students in the “regular” lab: If there is a good reason that you cannot attend your regularly scheduled laboratory section, you need to contact Dr. Todd Swanson. Detailed instructions regarding make-up lab procedures can (and should) be viewed in the “Lab Attendance Policy” file on the Moodle site for your lab section.

A note to students in discovery lab: The concepts and skills learned in the laboratory WILL be tested. Since the majority of students are in the “regular” lab sections, the experiments from that section will be most likely to show up on exams. My expectations of what you have learned will be limited to what we discussed in the lecture, and any experiment that is performed in all lab sections. This means that when we discuss a laboratory experiment in lecture, you should pay attention, even if you will not be doing that experiment.

Honor code: As members of the Gustavus Adolphus College community of scholars, we have agreed to abide by an excellent honor code, which you signed when you registered for classes. If you have forgotten the details of this code, please refer to the Gustie Guide under Academic Policies.

For homework assignments, I encourage you to work on problem sets with your classmates, but you must complete the homework for yourself. For quizzes and exams, you must do all the work on your own, and must only use the materials and resources that are specifically allowed according to the quiz/exam instructions. In laboratory, you are allowed to use only your own data, or that of your group (when appropriate) unless told otherwise by your instructor. As with homework, you are encouraged to discuss your laboratory results with fellow students in your group and others, as long as you submit your own work.

Under our code, you are not expected to police others’ actions, but you are expected to report violations of which you become aware. Every effort will be made to keep such reports confidential. Keeping silent about honor code violations is itself an honor code violation but more importantly, undermines the academic environment for everyone.

Sometimes it is difficult for students to negotiate the finer points of academic honesty, especially when it comes to homework and lab. If you have any questions about these policies, please come see me and I’ll be happy to explain in more detail.

Any student found in violation of the academic honesty policy and honor code will receive a grade of 0 for that assignment or activity. A second offense will result in an F for the course. The academic Dean will be notified of all offenses.

Succeeding in CHE 107:

Keep up with the work: For some students who have taken chemistry before, this course may seem easy in the beginning, but it does get harder quickly so I advise developing good study habits from the start. If you have not taken a chemistry course before, you may find the class more challenging, especially in the beginning. There is no reason you cannot succeed in this class without having taken

high school chemistry, but you will have to work hard from the beginning. Please come by my office in the first week or two of classes and we can talk.

To succeed in this class, it is essential to really, honestly work through all the problems on your own. Follow along in class as problems are worked, then try more practice problems along with the homework on your own. You may find that you need more practice problems than I assign; in this case choose even-numbered problems from the book to give yourself more practice (the answers are in the back). I will be happy to help you identify good practice problems, and to work with you on any problem, even if it is not one that I assigned. Practicing problems in study groups is a great way to learn, but make sure you are getting enough practice on your own as well.

Ask questions: Try not to be shy about asking and answering questions in class, and seeking additional help. Most chemistry students encounter difficulties with the course material from time to time, even those who earned an A in high school chemistry. Ask questions in class! If you have a question, it is *very* likely that someone else in the class has the same question and will be grateful that you asked.

I am happy to spend time with you outside of class to make sure you understand the course material. There are other sources of help on campus as well, including the chemistry tutors who meet Sunday-Thursday nights in Nobel 305. The most important thing is to take care of points of confusion as they come up, to avoid a snowball effect.

Other campus resources: If you find that you are having trouble with identifying a successful learning strategy, with time management, or with test anxiety, by all means come see me, but please also consider the Academic Advising Center (x7027). This office is staffed by wonderful, talented people who are experts at dealing with these sorts of issues.

If you have a physical, psychiatric/emotional, medical, attentional, or learning disability that may have an effect on your ability to fulfill course expectations, please contact Laurie Bickett (x6286, lbickett@gustavus.edu), in the Academic Advising Center. She will review your concerns and decide with you what accommodations are necessary. I will be happy to work with you, upon receipt of documentation from her. Discussions will remain confidential.

Course grade: I do not guarantee that I will use a grading curve. I will adjust letter grade assignments only if I feel the numerical scores earned do not reflect the level of mastery of material attained by the class. There is no limit to the number of “A” grades that I will give. The most likely grade breakdown is as follows:

A	94-100%
A-	90-93%
B+	87-89%
B	83-86%
B-	80-82%
C+	77-79%
C	73-76%
C-	70-72%
D	60-69%
F	< 60%

<i>Exams:</i>	40%
<i>Quizzes:</i>	20%
<i>Laboratory:</i>	20%
<i>Homework:</i>	10%
<i>Final exam:</i>	10%

Lecture schedule: Below is a rough outline of the topics that will be discussed in lecture. The schedule is tentative and may change if we need to spend more time on a given topic.

Dates	Topic	Homework/Quiz/Exam	Lab experiment
Sept 8, 9, 11	Introduction to Chemistry (Chapter 1)		<i>none</i>
Sept 14, 15, 16, 18	Atoms, Molecules, and Ions (Chapter 2)	<i>(F) Sept 18: Quiz 1</i>	<i>Bean statistics</i>
Sept 21, 22, 23, 25	Stoichiometry (Chapter 3)	(F) Sept 25: Exam I	<i>Empirical formulas</i>
Sept 28, 29, 30, Oct 2	Aqueous Reactions (Chapter 4)	<i>(F) Oct 2: Quiz 2</i>	<i>Solubility rules</i>
Oct 5, 9	Gases (Chapter 5)		<i>none</i>
Oct 12, 13, 14, 16	Energy Relationships (Chapter 6)	<i>(F) Oct 16: Quiz 3</i>	<i>Water hardness</i>
Oct 19, 20, 21, 23	Energy Relationships (Chapters 6 & 18.1 – 18.5)	(F) Oct 23: Exam II	<i>Gas constant</i>
Oct 28, 30	Electronic structure of atoms (Chapter 7)		<i>Reaction energetics</i>
Nov 2, 3, 4, 6	The Periodic Table Chemical Bonding (Chapters 8 & 9)	<i>(F) Nov 6: Quiz 4</i>	<i>Reaction energetics Copper determination</i>
Nov 9, 10, 11, 13	Chemical Bonding (Chapters 9 & 10.1-10.5)	<i>(F) Nov 13: Quiz 5</i>	<i>Copper determination Lewis structures</i>
Nov 16, 17, 18, 20	Intermolecular Forces Properties of Solutions (Chapters 12.1-12.2 & 13.1-13.3)	(F) Nov 20: Exam III	<i>Lewis structures Beach sand</i>
Nov 23, 24	Chemical Kinetics Chemical Equilibria (Chapters 14.1-14.3 & 15)		<i>Beach sand</i>
Nov 30, Dec 1, 2, 4	Chemical Equilibria (Chapter 15)	<i>(F) Dec 4: Quiz 6</i>	<i>Commercial antacids</i>
Dec 7, 8, 9, 11	Acids and Bases (Chapter 16.1-16.8)	(F) Dec 11: Exam IV	<i>Weak acids</i>
Dec 14, 15	Acid/Base Equilibria (Chapter 17.1-17.3)		
Dec 21	3:30 – 5:30 pm, Nobel 201	(M) Final Exam	