

Syllabus: Chemistry 107, NHS-201 Principles of Chemistry Fall 2011 MWThF: 8:00 – 8:50 am

Instructor: Dr. Tyler Morin
Office: Nobel 205A
Phone: X - 7323
Email: tmorin@gustavus.edu

Course Website: <https://moodle.gac.edu>

Required Text/Materials: General Chemistry, 4th Edition, McQuarrie, Rock, and Gallogly, University Science Books

Sapling Learning: You must purchase an account with Sapling Learning: www.saplinglearning.com

Calculator: Any calculator that can do logarithms and exponentials. You must know how to use it!

Lab supplies: Safety glasses/goggles, bound carbon-copy lab notebook, and lab packet.

Sapling Login Instructions:

1. Go to <http://saplinglearning.com>
- 2a. If you already have a Sapling Learning account, log in then skip to step 3.
- 2b. If you have Facebook account, you can use it to quickly create a SaplingLearning form will auto-fill with information from your Facebook account (you may need to log into Facebook in the popup window first). Choose a password and timezone, accept the site policy agreement, and click "Create my new account". You can then skip to step 3.
- 2c. Otherwise, click "create account" located under the username box. Supply the requested information and click "Create my new account". Check your email (and spam filter) for a message from Sapling Learning and click on the link provided in that email.
3. Find your course in the list (you may need to expand the subject and term categories) and click the link.
4. Select a payment option and follow the remaining instructions.

Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments. During sign up - and throughout the term - if you have any technical problems or grading issues, send an email to support@saplinglearning.com explaining the issue. The Sapling support team is almost always more able (and faster) to resolve issues than your instructor.

Office Hours: I have an open door policy. Feel free to drop by my office at any time, and if I am not currently occupied I will be more than happy to help you. Additionally, if you would like to schedule a specific time to come by that is fine too. I will also be happy to answer simple questions by email, but please keep in mind that detailed questions are most often best answered in person.

Note: I do commute daily from the Minneapolis area, so please keep this in mind for appointments, coming by my office, as well as if you do not receive an immediate response to your email. On days of bad weather I will most likely have to leave my office early and may not be available for appointments or immediate help.

About CHE-107: 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

Syllabus: Chemistry 107, NHS-201 Principles of Chemistry Fall 2011 MWThF: 8:00 – 8:50 am

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 intended to illustrate principles and develop experimental skills and to introduce you to the major subdisciplines in chemistry. Last but certainly not least is the development of critical thinking skills and the ability use these skills to work through multi-step problems in this course, which will be constantly re-enforced throughout the semester.

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

Attendance: While attendance is not mandatory (and there are no points associated with it), it is expected that you will be in attendance for lecture. Why? The material that makes up homework and exams will mostly come from lecture! You are responsible for material covered during the class period even material that is not fully described in the textbook.

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. The general rule of thumb is that all electronic devices should be turned off during class as to not distract anybody.

Assignments: There will be weekly online homework that is assigned through the Sapling website. You will need to check the Sapling Learning site to be sure of due dates. Late assignments WILL NOT be accepted. The best way to learn chemistry is to do chemistry, not only the required Sapling assignments but also extra problems from the book. Doing as many problems as possible will help you obtain a mastery of the subject. Additionally, trying to cram several problems into a single session immediately before an exam is rarely beneficial as there is just too much information to meaningfully take in and retain. I encourage you to do the problems as we cover each section in class and be prepared to review them and do additional problems as you study for exams.

Exams: There will be five one-hour exams (each worth 10 % of your grade) throughout the course of the semester (see schedule) with one final exam (worth 20 % of your grade, see date below). Exam content can consist of but is not limited to: lecture material, homework style problems, as well as laboratory material. Exam questions can be in the format of but are not limited to: multiple choice, short answer and multi-step problem solving questions. You should expect exams to require 50 minutes of work. Proper time management will be required to be successful on the exams. You may choose to write your exam with pencil or pen, but please note I will not regrade any exam or exam question written in pencil, erasable pen or containing white out. If I made a mistake in adding, I will re-total the exam regardless of what writing utensil was used to answer the exam.

Note: chemistry is a subject that should be considered cumulative. You cannot just learn and move on. So while the majority of the content will be material covered since the previous exam there may also be content that was covered at an earlier date.

Additionally, in order to receive full credit for a question on an exam you MUST SHOW ALL OF YOUR WORK. This will also ensure that partial credit is properly given.

Syllabus: Chemistry 107, NHS-201 Principles of Chemistry Fall 2011 MWThF: 8:00 – 8:50 am

Exam Attendance: It is expected that you will be in attendance on the day the exam is scheduled. If there becomes a necessary situation where you must be absent for an exam, you **MUST** contact me prior to the exam date to schedule a make up. 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 due to a last minute issue (e.g. illness) a make up will only be allowed in exceptional circumstances (I do not consider routine illness i.e. common cold to be exceptional). If you must miss an exam, I will ask for documentation of your reason for missing the exam. Please do not be offended; I require this of everyone.

You must bring a 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 have questions about what is allowed. 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 Wallenberg Auditorium. The date and time have been set by the registrar: Monday, December 17th, 3:30 pm – 5:30 pm; NHS-201. Please keep this in mind when you and your family make travel plans for the break. Alternate final exam times will be given only for extreme 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. All of the laboratory sections share a common lab manual, experiment schedule, and attendance policy. 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.

If there is a good reason that you cannot attend your regularly scheduled laboratory section, you need to contact Jessica Imholte. 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.

Peer Mentoring Program: To help you develop stronger learning skills and to better understand the ethos of scientific inquiry you will be participating in a Peer Mentoring program during the semester (funded by the college). The goal of this program is to help you be more successful in biology and chemistry, as well as other scientific courses.

Each week, you will meet with a small group of peers also enrolled in BIO101 and/or CHE107. The sessions are led by a junior or senior majoring in biology, chemistry, or biochemistry. The sessions involve activities where you will practice application and synthesis of concepts, and gain an enhanced understanding of the subjects.

You are required to **sign up** for a peer-mentoring group in **121 Nobel Hall** on **Wednesday, Sep. 5** or **Thursday, Sep. 6** between **5:00 - 9:00 pm**. If you are enrolled in either BIO 101 or CHE 107, you will sign up for a group that will focus solely on that class. If you are enrolled in both BIO 101 and CHE 107, you will sign up for a group that covers activities for both courses. Please bring your class and event

Syllabus: Chemistry 107, NHS-201 Principles of Chemistry Fall 2011 MWThF: 8:00 – 8:50 am

schedule with you when you sign up for a Peer Mentoring group to help determine which time will work best for you. Peer Mentors will be available at that time to answer your questions.

You will meet with your group once a week in Nobel 121 or Nobel 106B. Bring a notebook and a pen or pencil to your session, and possibly a textbook. Ten sessions are planned for the weeks of: Sep: 9, 16, 23; Oct: 7, 14, 28; Nov 4, 11, 25; and Dec. 4. There will be no sessions during Nobel Conference Week, Reading Week, or Thanksgiving week. A list of the Peer Mentoring activities for the semester is on Moodle. If you do not attend *and actively participate* in eight (8) of the ten (10) peer mentoring sessions, **you will lose 5%** of your final course points. If you have any questions, please contact Scott Bur or Aron Anderson, Peer Mentoring Coordinators at sbur@gustavus.edu or aander16@gustavus.edu.

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.

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, implicates you in undermining 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 particularly egregious first offense or any second offense will result in an F for the course. The academic Dean will be notified of all offenses.

Syllabus: Chemistry 107, NHS-201 Principles of Chemistry Fall 2011 MWThF: 8:00 – 8:50 am

Maximum Grade Cutoffs:	90 % (A-)
	80 % (B-)
	70 % (C-)
	60 % (D-)
	<60 % (F)

If you were to earn a 91 % for the final grade you will be guaranteed some sort of A, if you were to get an 87 % you would be guaranteed some sort of B with the possibility of being bumped to an A/A- depending on the final cutoffs (which will be determined only after the final exam).

Grading Breakdown:	Hour Exams = 10 % x 5 = 50 %
	Final Exam = 20 %
	Laboratory = 20 %
	Homework = 10 %

General Tips For Success! While chemistry at times can be a difficult subject that does not mean success is unobtainable! Here are some hints to help you succeed!

1.) Introduce yourself to me as well as your fellow classmates! I like to get to know all of my students, please feel free to come and see me, even if it's just to say hello & you do not have a question. I want you to feel comfortable asking me questions during in & out of class. Introducing yourself will help with this! Additionally, introducing yourself to your classmates will help you should want to form study groups or as another source of information.

2.) Develop well written notes! Chemistry is hard to study if you do not have well written notes. I will do my part by providing a well organized lecture that you can follow.

3.) Read & Reread the textbook! Be sure to stay up with readings for the current chapter. Additionally, if you come across something you do not understand read it until you do. If you come across words you do not understand, look them up!

4.) Do the homework! The Sapling homework is meant to help you keep pace with the lecture material & to prevent you from falling behind. It can also help your grade!

5.) Ask Questions! Do not be afraid to ask questions, I will do my best to answer every question and if I do not know the answer I will either find out or direct you to someone who does! There are plenty of sources for help including your lab instructor, TA's, peer mentors & tutors if need be.

6.) Study for exams! Pretty self explanatory and not cramming either! If you are doing the homework & keeping up with the lecture material this should be pretty easy!

7.) Do not be afraid of math! Math is a very important tool in chemistry. It necessitates that you be familiar with math and how to use it to solve problems.

8.) Seek Help if you need it: If you are having trouble or feel yourself falling behind do not hesitate to ask for help. The sooner you realize it the easier it will be to help. The longer you wait the harder it will be. There is no shame in seeking help be it with homework or lecture material and concepts.

Syllabus: Chemistry 107, NHS-201 Principles of Chemistry Fall 2011 MWThF: 8:00 – 8:50 am

Course Schedule: Below is the tentative course schedule with specified content we will be covering as well as the exam dates for the regular in class exams as well as the final exam.

Weeks	Date	Topics	Chapter(s)
	Module 1	Introduction & Atoms	
1 - 3		Math Background & Scientific Method Atomic Structure & Electron Configurations Chemical Periodicity & Periodic Table/Properties Exam 1: 9/19	1 - 5
	Module 2	Module 2: Bonding & Molecules	
3 - 6		Ionic & Covalent Bonding Formulas & Nomenclature Lewis Structures, Molecular Geometry & Polarity Valence Bond & MO Theory Nobel Conference 10/2 & 10/3 Exam 2: 10/10	3 - 6
	Module 3	Reactions & Thermodynamics	
6 - 9		Chemical Reactions/Equations Laws of Thermodynamics Thermodynamic Properties Calorimetry Reading Days: 10/22 & 10/23 Exam 3: 11/1	10, 14, 23
	Module 4	Stoichiometry & Phases	
9 - 12		Determination of Molecular Formula Moles, Molar Mass, Stoichiometry, Limiting Reactants & % Yield State Properties, Gases, Intermolecular Forces Condensed Phases, Phase Changes & Diagrams Thanksgiving Break: 11/21 - 11/25 Exam 4: 11/19	11 - 16
	Module 5	Equilibrium & Kinetics	17 - 22
13 - 15		Equilibrium Constants & Calculations Relationships between ΔG & K Acid-Base & Solubility Equilibria Rate Laws, Mechanisms & Temperature Dependence of Reaction Rates Exam 5: 12/12	
		Final Exam: Monday Dec. 17th 3:30 - 5:30 pm NHS-201	