

CHE-107 – Principles of Chemistry
Course Syllabus and Policies Fall 2009
(Syllabus subject to change by instructor)

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Lecture Meeting: NHS 201 MWRF 12:30 pm – 1:20 pm

Laboratory Meeting: Pre-lab lecture – NHS 121, 201, 222, 305, AUD
Laboratory exercises – NHS 306 or 307

Office Hours: My scheduled office hours are the following or by appointment:

Tuesday 10:30 am – 11:30 am

Wednesday 1:30 pm – 2:30 pm

Thursday 2:30 pm – 3:30 pm

Required Materials

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

Calculator: Must do logarithms and exponentials.

Laboratory Packet: Available from the Book Mark

Supplies (Available from the Book Mark): Safety goggles
Bound laboratory notebook (duplicate-page style)

On-line Resources

Moodle: This is where you can find information and handouts for the course.

<http://moodle.gac.edu/>

ARIS: This is where you do homework assignments.

<http://www.mharis.com/>

Introduction

CHE-107 – Principles of Chemistry is an introductory chemistry course. This course provides a basic understanding of key chemistry principles. Topics covered will include the fundamental concepts of chemistry, including the atom, periodicity, stoichiometry, properties of gases, liquids and solutions, acids and bases, chemical energetics, and bonding. Laboratory work is coordinated with lecture and is intended to illustrate principles and develop experimental skills. Whenever possible, I will discuss the connection between chemistry and other disciplines.

CHE-107 is taught in five independent sections, each with a different professor entirely responsible for his/her section. We will all use a similar syllabus, the same textbook, and the same laboratory program. However, exams, grading, and general course policy may differ from one section to another.

Attendance

Attendance at class lectures is important to your understanding of chemistry and is required for success in this class. Although attendance is not formally recorded in lecture, I expect your attendance at all classes and hold you responsible for all that is announced or discussed there. There is a lot of material

in the textbook. Only by attending lecture will you know what topics I consider to be the most important.

Homework

In order to do well in CHE-107, it is important that you stay current with the material presented in class. I will assign homework problems each week for you to complete that cover the topics discussed in class. These homework problems will be accessed through an on-line homework system that is associated with our textbook called ARIS. Instructions for accessing ARIS are on the Moodle site for this class.

On Monday of each week I will upload an on-line homework assignment, which will be accepted until noon on the due date (Saturday of each week). The system will grade the homework as you complete each problem, giving you tips (if necessary) to obtain the correct answer. The system (and I) will keep a record of your grade on each of the homework assignments. Late assignments will not be scored. You can still complete the assignments on-line for your benefit.

I encourage you to work with others and ask for help as you try to do on-line homework problems. However, it is important to distinguish between working with someone, receiving help from someone, and copying someone else's work. Obviously, copying someone else's homework does nothing for a student when it is time to take an exam. It is very important to me, to you, and to your grade to use the homework to learn the material. Any questions that you have in regard to the homework are welcome as topics for discussion during or outside of class.

One of your homework assignments is not on-line. Gustavus has the honor of hosting a Nobel Conference each year, during which scholars from around the world come to Gustavus to speak about a particular topic. This year's conference 'H₂O Uncertain Resource' will take place on October 6th and 7th. During these two days, we will not have class, however, I encourage you to attend as many conference events as your schedule allows. For this homework assignment you will attend/listen to at least one of the presentations and type a 2-page response/summary of the talk. We will talk about this assignment in more detail as the date draws near. This homework assignment is due at the beginning of class on Monday, October 12.

Your cumulative homework grade on the **12 best** homework assignments will account for 10% of your grade in this course. Only the laboratory and the final exam is a larger contributor to your total grade than homework. Be sure to get the homework points!

Quizzes

Quizzes will be similar to exams, only shorter (10-30 minutes). There are five quizzes (see last page for dates). Quizzes may be held in class, online, or as a take-home exercise. 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.

Exams

There will be four 50-minute exams (see last page for dates), which will contain multiple choice, fill-in the blank, and short answer problems. They will test your understanding of the material completed 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 *extraordinary* 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 as 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.

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 prohibited. The use of any potentially helpful information programmed by the student into (or otherwise attached to) a calculator constitutes academic dishonesty.

The final exam will be given on Thursday, December 17th from 3:30 pm – 5:30 pm in our regular classroom, NHS 201. All students must take the final at this time/place as mandated by the college. The final will be formatted like the 50-minute exams, but it will cover material from throughout the entire course. Special emphasis will be put on lecture topics covered after the fourth 50-minute exam.

Laboratory

It is essential that you attend all laboratory sessions, arrive for laboratory on time (in proper attire, *see Laboratory Manual*), read the experiment ahead of time, do the pre-lab exercise, and work up your data promptly. ***Laboratory attendance in your regularly scheduled section is mandatory.*** If there is a good reason that you cannot attend your regularly scheduled laboratory section, you must fill out the “Make-up Lab Request Form” available on the course Moodle site and e-mail the completed form to Dr. Swanson at tswanos2@gustavus.edu. Detailed instructions regarding make-up lab procedures can (and should) be viewed in the “Lab Attendance Policy” file on the course Moodle site.

The laboratory begins on Monday, September 14th. Most of the laboratories will be completed in a single three-hour session. Individuals and/or groups that work efficiently can usually complete the laboratory and laboratory analysis by the end of the laboratory session. However, completed laboratory notebook pages from a given experiment are not due until the beginning of the next laboratory session. Grading penalties will be imposed on reports received later than this. There will be no laboratory sessions on the days surrounding Nobel Conference (Oct 5-8), Reading Break (Oct. 26-27), and Thanksgiving Break (Nov 25-26). If you have specific questions related to the laboratory (laboratory grade, a laboratory absence, etc), please speak with your laboratory instructor.

Peer Mentoring Program

To help you develop strong learning skills in the natural sciences and to better understand the ethos of scientific inquiry, students in your BIO-101 and/or CHE-107 section will participate in a new Peer Mentoring program. This program is funded with a grant to the College from the Howard Hughes Medical Institute (HHMI).

Each week, you will meet with a small group of students enrolled in BIO-101, CHE-107 or both which will be led by a talented biology, chemistry or biochemistry major, to learn strategies to help you develop successful learning habits. These include setting reasonable academic goals, forming dynamic study groups, efficient note-taking, competent taking of exams, avoiding plagiarism, and managing time. Other discussions will focus on being a good scientist, formulating and testing hypotheses, analyzing data, and this year’s Nobel Conference.

You will sign up for a peer-mentoring group in the Peer Mentoring Center, Room 121, Nobel Hall of Science (NHS) on Thursday, Sept 10th between 4:30 to 9:00 pm. If you are enrolled in either BIO 101 Principles of Biology or CHE 107 Principles of Chemistry, 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 will contain activities that cover both courses. Please bring your class and event schedule with you when you sign up for a peer mentoring group to inform your decision about which group to sign up for. Peer mentors will be available to answer your questions during that time.

You will meet with your group and peer mentor once a week in the Peer Mentoring Center, Nobel 121. You will need to bring a notebook and a writing utensil to your weekly peer mentoring session. You will not be allowed to use electronic devices of any kind (including phones, ipods, blackberries, personal electronic devices, etc) during your peer mentoring session. Eleven formal sessions are planned for the fall semester including Thursday, Sept 10th and the weeks beginning Sunday, Sept. 13, 20, 27, Oct. 11, 18, Nov. 1, 8, 15, 29, Dec. 6. A summary of the curriculum for the semester will be made available on your course Moodle site. Attendance and active participation in at least eight of the 11 peer mentoring sessions will serve as count toward 5% of your final course grade in participating course sections of BIO-101 and/or CHE-107.

If you have any questions or concerns about the HHMI peer mentoring program, please contact Brenda Kelly, HHMI peer mentoring coordinator at bkelly@gustavus.edu.

Grading

The breakdown of your course grade is as follows:

Homework.....	10%
Quizzes.....	5%
50-minute exams.....	40%
Cumulative final exam.....	20%
Laboratory.....	20%
Peer Mentoring Program Participation.....	5%

The Gustavus Chemistry Department considers both lecture and laboratory to be essential, complementary parts of any chemistry course, including general chemistry. You **must** pass both the laboratory and lecture parts of CHE-107 to receive a passing final grade. This means that even if you were to have an 'A' in the lecture part of the course, too many missed labs or low laboratory grades would result in a final laboratory grade of 'F' and a final course grade of 'F'.

The **approximate** grading scale in this course will be:

A	93-100%
A-	90-92%
B+	88-89%
B	83-87%
B-	80-82%
C+	78-79%
C	73-77%
C-	70-72%
D+	68-69%
D	63-67%

The scale listed is guaranteed (*i.e.* if you average an 86% in the course (lecture and laboratory), you are guaranteed at least a B for the course). If circumstances force me to lower the grading scale a student who averages an 86%, may achieve a B+. However, I will not raise the grading scale (*i.e.* the student who averages an 86% will never receive a B-).

I will post all exam grades on the course Moodle page to allow you to track your progress in this course. Laboratory grades will be posted on the Moodle page for your individual laboratory section.

Homework grades are available on the ARIS homework site. Periodically, I will post a homework average on Moodle for you to track your progress.

Academic Honesty and Honor Code

Every student of Gustavus Adolphus College signs the following statement prior to enrollment and course registration:

‘As a community of scholars, the faculty and students of Gustavus Adolphus College have formulated an academic honesty policy and honor code system, which is printed in the Academic Bulletin and in the Gustavus Guide. As a student at Gustavus Adolphus College, I agree to uphold the honor code. This means that I will abide by the academic honesty policy, and abide by decisions of the joint student/faculty Honor Board.’

The following code will be signed on every examination:

‘On my honor, I pledge that I have not given, received, nor tolerated others’ use of unauthorized aid in completing this work.’

This code places the responsibility for academic honesty exactly where it should be – with the student. As a student of this college, you have promised to uphold the pledge and to abide by it. For my part, I will expect the honor pledge code to be signed by you on each exam that you take in this course. Any exam that is turned in without a signed pledge will not be graded without a discussion with me.

As described in more detail above, the majority of homework assignments will be performed and turned in on-line this semester. Although I encourage you to work on chemistry problems and learn about chemistry with your peers, in submitting your on-line homework, you are agreeing that you have upheld the honor code.

In laboratory it will be an honor code violation to use data other than that which has been collected by you and/or your group in your analyses (except under circumstances deemed appropriate by your instructor). Although you may be working with other people, you must still record all ideas, results, and analyses in your laboratory notebook. This, however, should not prevent you from discussing and consulting with others that are not in your particular laboratory group.

An integral part of the honor code is non-tolerance of violations. Under our code, students are not expected to police others’ actions. Rather, you agree to report violations of which you become aware. Failure to do so will constitute an honor code violation in this class.

Any student found in violation of the academic honesty policy and honor code will receive a grade of 0 for that exam, homework, or laboratory assignment. In addition, the Office of the Dean of the Faculty will be notified of the nature of the offense. A second offense will result in an F for the course. If you have any questions about these policies, please come see me.

Cell phones/pagers/other electronics

As a courtesy to your fellow classmates and instructors, please turn your cell phones, pagers, and any other electronic devices OFF during lecture and laboratory. It is also not acceptable to wear any type of headphones during lecture or laboratory. Use of a prohibited electronic device during lecture will result in dismissal from that lecture.

Services

Disability Services: If you have a specific physical, psychiatric/emotional, medical, or learning disability and require accommodations, please let me know during the first week of class so that your

learning needs may be appropriately met. You will need to provide documentation to the Disability Services Coordinator, Laurie Bickett, in the Advising Center (Johnson Student Union, 933-6286, lbickett@gustavus.edu). All discussions will remain confidential.

Help for Students Whose First Language is not English: The Writing Center has on staff a part-time tutor with professional training in English as a Second Language (ESL) and English Language Learners (ELL) instruction. Students can schedule work with this tutor by contacting the Writing Center.

Succeeding in CHE-107

Keep Current: It is very important that you keep up with the course material as it progresses. Keeping current will make the class much more understandable and enjoyable. You will be able to ask questions and make the class work for you. Keeping up with the course means attending class and laboratory, being prepared for class by completing the reading and homework, working in-class problems, reviewing class notes immediately following class, and seeking clarification of the material as soon as possible. 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.

Ask Questions: Addressing difficulties immediately is especially important in this course due to our frequent exam schedule (every two to three weeks). My office hours are listed on the first page and I guarantee I will be available in my office during these times. If these times are not convenient, contact me and we will arrange a time to meet.

Chemistry department tutors are available on Sunday-Wednesday evenings from 7 to 10 pm and Thursday evenings from 7 to 11 pm in NHS 305 to assist you with homework/explain concepts. The tutors are advanced level students who have successfully navigated Principles of Chemistry.

The Advising/Counseling Center (Johnson Student Union, Room 204) is open daily to help students with study problems, time management problems, personal problems, and many other problems that interfere with your ability to do your best work. Please do not be shy in using any service that exists on the Gustavus campus to help you deal with problems.

Utilize the Peer Mentoring Program: This program will help you develop good learning/study habits and skills in the context of the natural sciences. Your peers who have successfully completed CHE-107 and/or BIO-101 have the experience to help you as you start/continue your college careers. Utilize their knowledge and learn how to be successful through informative discussions on setting reasonable academic goals, efficient note taking, competent exam taking, and managing time.

Tentative Schedule

Note: If we need to spend more or less time on a given topic, we will.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		9/9 Introduction/Chapter 1	9/10 Chapter 1 ARIS Registration	9/11 Chapter 1	9/12 HW 1 Due
9/14 Chapter 2		9/16 Chapter 2	9/17 Quiz 1 Chapter 2	9/18 Chapter 3.1-3.6	9/19 HW 2 Due
9/21 Chapter 3.1-3.6		9/23 Chapter 3.7, 4.1-4.4	9/24 Chapter 3.7, 4.1-4.4	9/25 Exam 1: Chapter 1, 2, 3.1-3.6	9/26 HW 3 Due
9/28 Chapter 3.8-3.10		9/30 Chapter 4.5-4.6, 13.3	10/1 Chapter 5	10/2 Chapter 5	10/3 HW 4 Due
10/5 Quiz 2 Chapter 6, 18.1-18.5	10/6 – 10/7: Nobel Conference – No class		10/8 Chapter 6, 18.1-18.5	10/9 Chapter 6, 18.1-18.5	10/10 HW 5 Due
10/12 Chapter 6, 18.1-18.5 Nobel HW Due		10/14 Exam 2: Chapter 4-6, 18.1-18.5	10/15 Chapter 7	10/16 Chapter 7	10/17 HW 6 Due
10/19 Chapter 7		10/21 Chapter 8	10/22 Quiz 3 Chapter 8	10/23 Chapter 8	10/24 HW 7 Due
10/26 – 10/27: Reading Break – No class		10/28 Chapter 9	10/29 Chapter 9	10/30 Chapter 9	10/31 HW 8 Due
11/2 Exam 3: Chapter 7-9		11/4 Chapter 10	11/5 Chapter 10	11/6 Chapter 10	11/7 HW 9 Due
11/9 Chapter 12		11/11 Chapter 12	11/12 Quiz 4 Chapter 13	11/13 Chapter 13	11/14 HW 10 Due
11/16 Chapter 15, 18.6		11/18 Chapter 15, 18.6	11/19 Chapter 15, 18.6	11/20 Chapter 15, 18.6	11/21 HW 11 Due
11/23 Exam 4: Chapter 10, 12, 13 15, 18.6	11/25 – 11/27: Thanksgiving Break – No class				
11/30 Chapter 16		12/2 Chapter 16	12/3 Chapter 16	12/4 Chapter 17	12/5 HW 12 Due
12/7 Chapter 17		12/9 Quiz 5 Chapter 14	12/10 Chapter 14	12/11 Chapter 14	12/12 HW 13 Due
12/14 Review		12/16	12/17 Final Exam 3:30-5:30		