

CHEM 1256 SYLLABUS & STUDY GUIDE
Honors General Chemistry, 2nd Semester
Spring 2009

Instructor:

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Introduction

Welcome to the second semester of Honors General Chemistry (Chem 1256) at Montana Tech. This course is designed to introduce you to more of the fundamental principles of chemistry such as thermodynamics, chemical kinetics, and chemical equilibria for acid/base, precipitation and redox reactions. The conceptual and problem solving skills you learn in this course are similar to the ones you will need in many other science and engineering areas. Perhaps the words, “fundamental principles of chemistry” are new to you and may cause you to question whether you belong in this class. However, remember that any science seeks to explain the world in as simple terms and concepts as possible. So when we say “fundamental principles of chemistry”, we mean the simplest model (or picture) that explains the physical changes we observe. To these simple models we do other stuff like add mathematics or additional details that allow us to use the model quantitatively; that is we can then make measurements based upon predictions that come out of our “model”. So one of the most important skills you can develop for studying science or engineering is to be able to develop a simple picture of the phenomenon you wish to understand. To this end, the instructors and text authors have provided a number of ways to develop problem-solving skills for this course. The oldest and most important learning tool is class attendance, which is MANDATORY. The newest skills involve hypertext and on-line learning using your computer and/or a computer on campus. For instance, for each of the chapters we cover in class, there will be an On-Line quiz required using the SmartWork system. All of the multimedia material associated with this class can be accessed through the BlackBoard web-portal (mymtech.mtech.edu).

Good luck gaining a better understanding of basic chemistry. Remember if you get stuck trying to solve a problem, or understand a “fundamental principle”, find help immediately either from the instructor, the campus Learning Center, or using the many multimedia tools provided with your text and the Web.

CHEM1266H Prerequisites

First Semester of Honors General Chemistry (CHEM1256H) or permission of the instructor.

Text

Chemistry: The Science in Context; Gilbert, Kirss, Foster and Davies, 2nd edition, Norton Publishers, 2008. You can find a “hard copy” of the text in the Montana Tech Bookstore; or you can purchase an electronic version (ebook) of this text by going to the StudySpace site mentioned above. It is ***required*** that you also purchase the material to register for the SmartWork homework system (ask at the Tech bookstore). Make sure you purchase the ebook with SmartWork if you decide to buy the electronic version.

SmartWork and StudySpace:

Homework for Chemistry 1066 will all be completed online using a new system called SmartWork. You can get access to SmartWork through the Resource/Help site (StudySpace) provided by the publisher of your textbook:

StudySpace (<http://www.wwnorton.com/college/chemistry/gilbert2/>)

You will need to buy an access code for registering with SmartWork; this is described under the textbook section below, however the code from the previous semester should work.

Course information site

<http://mttechchem.blogspot.com/>

Homework

There will be no formal homework assignments to be turned in as “hard copy” for grading. However, learning chemistry is all about learning to solve chemical problems, so in this syllabus, and often in class, we ask you to work problems of a type that you are certain to encounter on an up-coming exam. Therefore, the best way to study and prepare for an exam is by learning to solve these types of problem.

Also, as part of preparing for your exam and for a part of your grade you will be asked to complete on-line homework using the **SmartWork** system. Specifics of online homework will be covered in class. The homework assignment all together will count the same as one exam. Access to online homework will be allowed for a fixed amount of time; however you will usually have multiple attempts to answer each question.

Quizzes

Unannounced quizzes will be given periodically in class. The points earned from these quizzes will be included as a part of your regular total points. There will be no makeup for these quizzes (remember that class attendance is mandatory). We will drop one quiz at the end of the semester.

Regular Exams

There are four regular exams worth 100-points each. I will determine your grade based on your four regular exams, your homework, your on-line quizzes, and the final exam.

All exams are currently scheduled for Tuesdays, *outside of regular class meeting times*. Generally, the exam will be offered at two different times (5-7 PM & 7-9 PM). The reasons for this are so that we may permit up to two hours for the students to work the exam. This should help to remove stress as a factor in taking the exams. **Exam dates and/or material covered are subject to change.**

Proposed Exam Dates are:

Exam I Chs. 10, 11 & 12 (partial) Tuesday, February 10th , 2009

Exam II Chs. 12 (remainder), 13 & 14 Tuesday, March 10st, 2009

Exam III Chs. 15 & 16 Tuesday, April 7th , 2009

Exam IV Chs. 17 & 18 Tuesday, April 28th , 2009

If you are aware of any potential conflicts with these exam times, you must notify the instructor *in writing* within the week prior to the exam. Make-up exam times can then be arranged **ONLY** with prior approval of the instructor.

Each of the four regular exams will consist of a collection of multiply-choice and short-answer questions. Some of the exam questions will be taken from the end of chapter problems for those chapters covered by the exam. In some cases the numbers, the types of substances, and/or the phrasing in the question may be changed slightly from the way the question appeared in your text. In many cases there will be no changes. This should encourage you to work the end-of the chapter problems and hence learn the material.

“Graphing” calculators capable of storing and displaying text and formulas will not be allowed during the exams. You should acquire a calculator with the functions $1/x$, 10^x , e^x , $\ln(x)$, $\log(x)$ for use during the exams. Appropriate calculators available in the Tech Bookstore or even Wal-Mart, and generally cost less than \$15-20. Some examples of acceptable calculators are: Sharp EL-509G and EL-506G, Texas Instruments TI-30X, and the CASIO *fx-300MS*.

Because it is impossible for us to get to know all of the ~200 students in this course, **we will check validated Montana Tech IDs at each exam.**

Approximate Calendar for Spring Semester 2009

January 2009

Monday	Tuesday	Wednesday	Thursday	Friday
			1	2
5	6	7	8	9
12	13	14 Classes begin Chap. 10	15 Chap. 10	16 Chap. 10
19 Martin Luther King Holiday – no classes	20 Chap. 10	21 Chap. 10	22 Chap. 10	23 Chap. 10
26 Chap. 11	27 Chap. 10/11	28 Chap. 11	29 Chap. 11	30 Chap. 11

February 2009

Monday	Tuesday	Wednesday	Thursday	Friday
2 Chap. 11	3 Chap. 11	4 Chap. 12	5 Chap. 12	6 Chap. 12
9 Chap. 12 & review	10 Exam 1 Chaps. 10, 11, & (part of) 12	11 Chap. 12	12 Chap. 12	13 Chap. 12
16 President's Day Holiday No classes	17 Chap. 13	18 Chap. 13	19 Chap. 13	20 Chap. 13
23 Chap. 13	24 Chap. 13	25 Chap. 13	26 Chap. 13/14	27 Chap. 14

March 2009

Monday	Tuesday	Wednesday	Thursday	Friday
2 Chap. 14	3 Chap. 14	4 Chap. 14	5 Chap. 14	6 Chap. 14
9 Chap. 14 & review	10 Exam 2 Chaps. 12 (remainder), 13 & 14.	11 Chap. 15	12 Chap. 15 Midterm Grades	13 Chap. 15
16 Spring Break No classes	17 Spring Break No classes	18 Spring Break No classes	19 Spring Break No classes	20 Spring Break No classes
23 Chap. 15	24 Chap. 15	25 Chap. 15	26 Chap. 15/16 Last Day to Drop!	27 Chap. 15/16
30 Chap. 16	31 Chap. 16			

April 2009

Monday	Tuesday	Wednesday	Thursday	Friday
		1 Chap. 16	2 Chap. 16	3 Chap. 16
6 Chap. 16 & review	7 Exam 3 Chaps. 15 & 16	8 Chap. 17	9 Chap. 17	10 Spring Mini-Break Non-instruction
13 Chap. 17 Pre-registration for Summer/Fall	14 Chap. 17	15 Chap. 17	16 Chap. 17/18	17 Chap. 18
20 Chap. 18	21 Chap. 18	22 Chap. 18	23 Chap. 18	24 Chap. 18
27 Chap. 18 & review	28 Exam 4 Chaps. 17 & 18	29 Review for final	30 Review for final	

May 2009

Monday	Tuesday	Wednesday	Thursday	Friday
				1 Review for final
4 Final exams	5 Final exams <u>Sec. 2:</u> 3-5 PM, CBB 101	6 Final exams	7 Final exams <u>Sec. 3:</u> 8-10 AM, ELC 203 <u>Sec. 1:</u> 3-5 PM, CBB 101	8 Final exams
11 School's out for Summer	12	13	14	15