

Spring 2012
Chem 114 - General Chemistry
Black Hills State University
M, W, F 9:00 -9:50, Jonas 302

Instructor: Dr. Micheal Zehfus
Office: Science 108
Phone 642-6028
Campus P.O. Box 9088
Office Hours: Posted on door
Email: Michael.Zehfus@bhsu.edu

Catalog Description:

A continuation of CHEM 112. An introduction to the basic principles of chemistry for students needing an extensive background in chemistry.

Prerequisites and/or Corequisites:

Prerequisite: Math 112 *Corequisite:* Chem 114L

Course Objectives:

To gain a functional understanding of many basic chemical principals. In this semester we will focus on covalent bonding, Lewis structures and the VSEPR theory to help understand the three dimensional structure of molecules. We will then move on to basic atomic and molecular orbital theory. This will be followed by a brief introduction to organic chemistry. We will then study intermolecular forces and how they give us the properties of solids and liquids we are familiar with. In the last half of the semester we will study chemical kinetics, and equilibria. We will finish with an in depth study of acid/base equilibria processes and return to thermodynamics.

Text and material:

Chemistry, Zumdahl & Zumdahl, 8th ed., Houghton-Mifflin, Boston (2010)
lab notebook, and scientific calculator

-Additional class material may be obtained on the Chemistry Web page:
(www.bhsu.edu/michealzehfus) look under **Courses - General Chemistry II (Chem 114/114L)**

Help:

Students who need extra help are encouraged to stop by my office at any time.

Cheating and Plagiarism Policy:

A student who, in connection with his or her studies, disrupts a class, plagiarizes, cheats, or otherwise violates reasonable standards of academic behavior may, at my discretion, have his or her enrollment canceled and/or be given a reduced or failing grade. For more information on specific acts that can constitute academic dishonesty, see your student handbook.

General Education Requirements:

This course can be used to fulfill the State of South Dakota General Education Goal 6: Students will understand the fundamentals principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world. Specifically this course fulfills objective 3: Identify and explain the basic concepts, terminology and theories of selected natural science and objective 4: Apply selected natural concepts and theories to contemporary issues. Both of these objectives are assessed primarily through tests and exams

Teaching Endorsement:

This course supports the College of Education's conceptual framework, Preparing Professionals for the 21st Century by presenting to students the knowledge base for the content they will eventually be teaching. Mastery of the content in this course supports INTASC Standard One: Knowledge of Content and Pedagogy. This course also partially fulfills content requirements for the 7-12 Chemistry Standards 2000 as per ARSD 24:16:08:16. Specifically this course contains elements that partially fulfill the common science standards, science education standards 2a, 2b, 2d, and 2e (Chemistry). Students demonstrate this competency through hour exams, final exams, and lab exercises and exams.

This course also meets the standards of The American Chemical Society as identified in the course objectives.

ADA Statement:

Reasonable accommodations, as arranged through the Disabilities Services Coordinator, will be provided students with documented disabilities. Contact the BHSU Disabilities Services Coordinator, Mike McNeil, at 605-642-6099, (WA 145) or via email at mike.mcneil@bhsu.edu for more information. Additional information can also be found at <http://www.bhsu.edu/StudentLife/Learning/DisabilityServices/tabid/162/Default.aspx>

Academic Freedom Statement:

Under Board of Regents and University policy student academic performance may be evaluated solely on an academic basis, not on opinions or conduct in matters unrelated to academic standards. Students should be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled. Students who believe that an academic evaluation reflects prejudiced or capricious consideration of student opinions or conduct unrelated to academic standards should contact the chair of the department in which the course is being taught to initiate a review of the evaluation.

Attendance:

I expect you to show up for all classes, but I will not take attendance. While attendance at class will not directly effect your grade, I tend to be more helpful to a person who regularly attends class.

If you have a conflict with an exam, please notify *before the exam* me so we can resolve the problem. If you have to miss an exam due to illness or other emergency, please let me know within 24 hours so we can reschedule.

Web Material:

There are three online sources of material to help you in this course.

1. The first is a set of web pages I have designed to supplement this class

Go to my home page on the BHSU web site: www.bhsu.edu/michealzehfus

(Note the spelling of micheal)

- Move your mouse over the 'Courses' tab and click on **General Chemistry II (Chem 114/114L)**

Find the section called Study Help on the right hand panel

Click on Lecture Notes, Past Test, Past Quizzes, Study Guides or Answer Keys

2. The same material is also be available on the L:drive

From an on campus computer go to 'My Computer'

Click on the **L:drive**

Click on the **Handouts** folder

Click on **MichaelZehfus**

Click on **General Chemistry**

3. <http://www.webassign.net/>

This is the website for the WebAssign homework. There several ways to get access to the homework assignments, let me outline the easiest.

1. Go to the above site with any web browser.

2. Look for the link "I Have a Class Key" in the middle of the right hand side of this page.

Click on this link.

The class key for this course is: bhsu 1050 4809

Enter this key as directed.

3. Enter subsequent information as needed to set up an account. If you purchased WebAssign for a full year in the fall semester, you should be good to go. If you didn't, then you have 31 days free access to your account so you can get started on your homework right now, even if you have not yet purchased an access code. WebAssign will remind you to get the code and enter it for 1 month.

I will make it a point to help students get their accounts set up, and we can do this at the end of the first lab period, so you can get started before the first week has past.

Course Outline:

Week	Date	Sections of text covered
0	1/13	9.1-9.2
1	18, 20	9.3-9.5
2	23, 25, 27	22.1- 22.5
3	1/30 2/1, 3	22.6 - 10.3
4	6, 8, 10	Exam 10.4-10.8
5	13, 15, 17	10.8-11.3
6	22, 24	11.4-11.8
7	2/27, 29 3/2 5, 7, 9	Exam 12.1-12.3 Spring Break
8	12, 14, 16	12.4-12.8
9	19, 21, 23	13.1-13.6
10	26, 28, 30	Exam 13.6-14.2
11	4/2, 4	14.2- 14.5
12	11, 13	14.6-15.1
13	16, 18, 20	15.2-15.6, 17.2 (Skip 15.3,15.7, 15.8, 16)
14	23, 25, 27	17.3-17.7 Exam

Final Exam, Week of April 30 May 4, See BHSU Master Schedule

WebAssign Course Key code: bhsu 6787 1462

Evaluation - Exams

Four hour exams are shown on the above schedule. Each hour exam is worth 100 points. *The final exam is a standardized final covering the entire year of general chemistry*, and it will be worth 100 points. At this point I would like to use the following grading scheme:

A	88-100%
B	78-87%
C	63-77%
D	50-62%
F	<50%

This may change if necessary.

Evaluation-Homework

For each chapter there will be homework assignment to cover basic concepts given in lecture. These homework assignments are found in the WebAssign web material provided with the text. If you do not have WebAssign contact me for paper copies of the assignments.

You may consider these homeworks as optional, since the homework points are added as bonus points to your total test points (See below). You should know, however, that homework points are going to be the main criteria I use when evaluating borderline grades, so if you don't do homework, you won't get bumped up if you are on the borderline.

Homework assignments are due by the due date posted. If you cannot complete the assignment by the due date, contact me directly using my campus Email (michael.zehfus@bhsu.edu) and make arrangements for a late submission.

Evaluation - Final grade determination

Since we have 5 tests, each worth 100 points, there is a maximum of 500 points possible on tests alone. Using the above grading scale, you need a total of 440 points for an A, 390 points for a B, 315 points for a C and 250 points for a D.

The person who submits the most correct WebAssign homework before the due date will receive 50 bonus points that are simply added to their point total. If you submit less homework assignments I will compare your score to that of the person who did the best, and you will get a proportion of 50 points added to your grade. For instance, assume the person who did the best on the homework assignments had a total of 180 homework points, and you got credit for 120 homework points. You had $120/180$ or 66.7% of the best score, so you get 66.7% of 50 points, or 33.3 points added to your point total.

Homework - From the book

The WebAssign homeworks are problems taken from the end of each chapter. The odd number problems have their answers given in the back of the book so you can see if you got them right.