

**Essentials of Chemistry - Spring 2007**  
**Chem 101, section 001**  
**Mon, Wed, and Fri 11:40-12:30am L 165**

**Instructor information**

**Instructor:** Darcy Thie  
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**Office hours:** Tues and Fri 1-3pm and also by appointment  
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**Required materials**

**Text:** *General, Organic, & Biological Chemistry, 4<sup>th</sup> edition* by H. Stephen Stoker

**Materials:** Large 3-ring binder  
Scientific calculator (must be able to perform logarithms)  
Regular access to a computer

**Suggested study guide:** *Study Guide with Solutions to Selected Problems for General, Organic, and Biological Chemistry, 4<sup>th</sup> edition* by Danny V. White and Joanne A. White

**Course Objective**

This introductory course is designed to give students who are planning a career in a health-related field a solid foundation in the principles of inorganic chemistry to be used in future work. After successful completion of the course, the student should be familiar with and competent in the following: 1) basic scientific skills, such as using scientific notation, significant figures, and metric conversions, 2) the properties of atoms and the periodic table, 3) characteristics of ionic and covalent bonding, 4) properties of inorganic chemical reactions and molar relationships, 5) physical states of matter, 6) the basic ideal gas law and associated laws, 7) properties of solutions, 8) concepts about equilibrium, 9) acid-base chemistry, and 10) general nuclear chemistry. This course also serves as a requirement in the BSU Core Curriculum. The goals that are applicable to this course from the core requirements are given below:

**Critical Thinking/Problem Solving**

- ✓ Clearly identify and analyze a problem; identify important information within the problem to construct correct solutions.
- ✓ Use both qualitative and quantitative methods of reasoning.

### **Communication Skills**

- ✓ Read and interpret written discourse.
- ✓ Listen to and interpret spoken discourse.
- ✓ Use speaking, listening, and interpersonal skills in small groups to teach and learn from others.

### **Cultural Perspective**

- ✓ This course does not address this core goal

### **Breadth of Knowledge and Intellectual Perspective**

- ✓ Articulate basic assumptions, concepts, theories, and factual information appropriate to chemistry.
- ✓ Apply techniques and investigations relevant for solving chemistry problems.
- ✓ Apply appropriate critical thinking/problem solving skills and communication skills in the context of chemistry.

### **Prerequisite**

In order to be successful in this course, all students must have successfully completed Math 025 or have received a satisfactory math placement score.

### **Course Website**

The online website, Blackboard (Bb), will be used frequently. It is required that you access this website throughout the week and on weekends to view announcements and also to print relevant material for the next day in class. Relevant material includes class notes (recommended, but not required), homework assignments as pdf files, and other handouts.

Blackboard can be accessed at <http://blackboard.boisestate.edu>. The username and password for Bb are the same as the username and password used with broncoweb.

### **Attendance**

Attendance in lecture is highly recommended; however, roll will not be taken. Attendance for exams is required on the day of the exam. Exceptions will be made ONLY for students with university excuses or students with **extreme** family or medical emergencies. Proof is required for such emergencies. Students with university excuses must alert the instructor about an absence BEFORE the exam is given. Students with extreme family or medical emergencies must alert the instructor of an absence by 12:00noon **on the day of the exam in order to take a makeup exam (please leave a message if I am not in my office).** **Absolutely NO exceptions will be made for the final.**

### **Laboratory**

The required manual for the laboratory can be purchased in the bookstore. The laboratory associated with this lecture is mandatory. The syllabus will be passed out in lab.\*

***\*Note: Attendance in lab is MANDATORY for the first week of class. Students that miss the first week of lab will be dropped from both lab and lecture.***

## Lecture Assignments and Exams

There will be 9 homework assignments given throughout the semester. The homework grade will be calculated from the best 8 of 9 homework assignments that are given (for a total of 80 possible points—see point break down below). Because the best 8 of 9 scores are used, homework assignments **will not** be accepted late. There are no exceptions to this rule, including computer problems.

Homework will be available on the Bb website through a link to a pdf file. This file is easily downloadable and can be printed and written on. To turn the homework assignment in, students must take the homework as a "quiz" on blackboard. This "quiz" is an exact replica of the pdf file that is downloaded from the site. Taking the homework as a "quiz" enables the student to receive a score right after the "quiz" is submitted. All 9 homework assignments will be submitted in this way.

There will be 4 exams and one final exam. Each exam will cover only the material presented since the previous exam, but some "key" topics will carry throughout the entire semester. The final is cumulative. Everyone must take the final.

## In-class/Participation Assignments

There will be a variety of in-class/participation assignments offered throughout the semester. The particular assignments are listed below, with the possible points listed in parentheses. A total of 117 points will be offered for this portion of the class, of which each student may receive a maximum of 100 possible points - and no more!

Style-of-learning assessment (15 points): This learning assessment involves a series of questions that makes a conclusion about what type of learner you are. The website this assessment is found on is [www.vark-learn.com](http://www.vark-learn.com) (go to "questionnaire" to get to the assessment). The assignment involves completing the assessment, printing off the results of the assessment **and** the descriptions of the top two ways that you learn the best, as determined from the assessment. For full credit, the results and the description of the learning techniques must be turned in during class on Monday, Jan 22.

**Comment [DAT1]:** Printing off "multimodal" is not ok. Print off the helpsheet for study strategies that apply to your learning preference. Print off top two if you are multimodal. If you only have one strong preference, print off the helpsheet for that one preference.

In-class verbal questions (5 points each x 2 questions = 10 points): During each lecture, I will choose three students at random that will be answering questions for that particular lecture day. I will announce the students at the beginning of class, but will not ask the question until we are at a certain point during lecture. Your name will be called only twice during the semester and if you are not in class on the day that you name is called, then your name will go back into the hat and will be called again at a later date (this will be done a maximum of two times for each round). Simply answering the question does not ensure all 5 points. The point break-down:  
Correct answer without help from a neighbor: 5 points  
Correct answer with help from a neighbor: 4 points  
Incorrect answer without help from a neighbor: 3 points  
Incorrect answer with help from a neighbor: 2 points  
An answer of "I don't know": 0 points

In-class assignments (8 points each x 9 assignments = 72 points): Throughout the semester, we will be working in small groups to answer some written, in-class questions given during class. These in-class assignments are intended to help you understand the material even more with an aid available. You will be given about 20 minutes to complete an in-class assignment and the assignments must be turned in at the end of the class period. Students will be working in groups (as assigned at the beginning of the semester), but each student must turn in their own work. The point breakdown for the in-class written assignments is as follows:

Correct answer(s): 2 points

Correct work: 4 points

Correct answer for "big idea": 2 points

Review attendance (5 points for each review x 4 reviews = 20 points): For each chapter exam, I give a review one lecture day prior to the exam. If you attend these reviews, you will be given 5 points for each review.

**Point Break-down:**

9 homework assignments @ 10 points each = 90 points

Take the best 8 of 9 scores: **80 possible points**

4 chapter exams @ 100 points each = 400 points

In-class component @ 100 maximum points available = 100 points

Take the best 4 out of 5 components: **400 possible points**

1 final exam @ 120 points = **120 points**

Total lecture points available = **600 points\*\***

**\*\*Note:** The 600 points listed above are only for the *lecture* portion of the class. This accounts for 75% of the final lecture grade. Laboratory is worth 25% of the final lecture grade. At the end of the semester, your lab grade will be reported to the lecture instructor and factored into the overall lecture grade. An example grade calculation can be seen below.

Example grade calculation (the bolded numbers are the numbers used to calculate final lecture grade):

Top 8 homework grades: **65 points**

Exam 1: **94 points**, Exam 2: **72 points**, Exam 3: 64 points, Exam 4: **88 points**

In-class component: **82 points**

**\*Note: Exam 3 grade was dropped**

Final exam: **92 points**

Total lecture points: 493 points, out of 600 = 82.2%

If you have an 82.2% from lecture and a 91.0% from lab, your overall grade would be:  
 $(75\% \times 82.2) + (25\% \times 91.0) = 84.4\%$ , for a B in the course (see grade scale below).

*Note: Students must obtain a minimum percentage of 70% in the lab portion of the course to be eligible for a passing grade (A-C) in Chem 101. Failure to achieve a 70% score in lab will result in a D or F in the entire course of Chem 101 (not just the lab portion).*

### **Grading**

The grade scale for this course is: 100-90% A (A+, A, A-); 89-80% B (B+, B, B-); 79-70% C (C+, C, C-); 69-60% D (D+, D, D-); ≤ 59% F

Please refer to pages 26-27 of the BSU 2006-2007 Undergraduate Catalog for questions regarding new grading policies.

Grades will be posted on Blackboard.

### **Academic Dishonesty**

Academic dishonesty will not be tolerated in lecture or lab. It is expected that all students adhere to the Boise State University Code of Conduct, which can be found at:

<http://www2.boisestate.edu/studentconduct/avoidingacademicdishonesty.htm>

Students that violate the standards set by the university will be punished by the terms outlined in the Code of Conduct.

### **Common Courtesy**

It is important to respect others during class time. Please silence your cell phones during class and limit conversations with other students during class to related material. Also, please refrain from packing up early. The lecture time is 50 minutes and students should not begin packing early unless class has ended.

**Proposed schedule\*\*** Note: The schedule is subject to change

<b>The week of...</b>	<b>Chapters covered...</b>	<b>Special dates to remember...</b>
Jan 17 - 19	Syllabus, Chapters 1 and 2	
Jan 22 - 26	Chapters 2 and 3	
Jan 29 - Feb 2	Chapters 3 and 4	
Feb 5 - 9	Chapter 4	<b>Friday, Feb 9: Exam 1</b>
Feb 12 - 16	Chapter 5	
Feb 19 - 23	Chapter 5	<b>No class Mon - President's Day</b>
Feb 26 - Mar 2	Chapter 6	<b>Friday, Mar 2: Exam 2</b>
Mar 5 - 9	Chapter 7	
Mar 12 - 16	Chapter 7 and 8	
Mar 19 - 23	Chapter 8	<b>Friday, Mar 23: Exam 3</b>
<b>Mar 26 - 30</b>	<b>Spring Break</b>	<b>Spring Break!!!</b>
Apr 2 - 6	Chapter 9	
Apr 9 - 13	Chapter 9	
Apr 16 - 20	Chapter 10	
Apr 23 - 27	Chapter 10 and 11	<b>Fri, Apr 27: Exam 4</b>
Apr 30 - May 4	Chapter 11	
May 9	<b>Final's Week</b>	<b>Thurs, May 10: 10:30am-12:30pm: Final Exam (held in the same room)</b>