

Chemistry 251
Reactivity II
Fall 2012 version 1.0

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Office Hours: 9:45 – 10:45 Day 3 & 5; 1:00 – 2:00 even days; drop-ins are OK

Course Materials:

- **Textbook:** Chemistry 251 Custom Book (available in bookstore)
- **OWL:** **Two Online Homework Passcodes:**
 - 1) Hornback (purchased last semester or shrink-wrapped with text)
 - 2) Garrett & Grisham (shrink-wrapped with text)
- **Workbook:** *Principles of Reactivity 2 Workbook*
Please order a black and white printed version from Academic Pub (\$24.53 plus e-book version for free). Delivery takes about 1.5 – 2 weeks. Follow the link below:
http://academicpub.sharedbook.com/serve/ac/acapub/student_product_page.html?slug=1344284028_15_881

Online Text: Readings and problems (<http://employees.csbsju.edu/cschaller/srobi.htm>).

Course Description: This course is an integrated look at reactivity patterns across chemistry, with applications in organic, inorganic and biochemistry. Chemical kinetics is developed as a tool for understanding how reactions take place. We will continue to examine Lewis acid & base reactivity in new settings.

Late Items: Items handed in late lose 10% of their initial value immediately; an additional 10% of initial value is lost each subsequent morning.

Participation & Attendance: We sometimes do team assignments in this class. Students may be ineligible to do these assignments due to poor attendance or poor participation.

Grading: The following are approximate **mid-points** for letter grades (e.g. the A's would be centered around 95%, with some A's getting more than 95 and some less than 95):

A = 95%, AB = 87%, B = 80%, BC = 72%, C = 65%, CD = 57%, D = 50%.

Students earning below 45% overall will receive an F.

Here is the assignment summary:

a.	cycle PSAs (20 pts each, best 11 plus ave.)	240 pts
b.	monthly PSAs (40 pts each, best 3 plus ave.)	160 pts
c.	seasonal PSAs (100 pts each)	200 pts
d.	online OWL (170 out of 182 possible pts)	170 pts
e.	other homework (10 pts each)	150 pts
f.	participation (10 pts / third semester)	30 pts
g.	passports (5 pts each)	30 pts
h.	peer evaluations (5 pts / third semester)	15 pts
	total	995 pts

Note: The course is cumulative; all tests will require knowledge of material from previous tests.

Study ideas: No individual topic in this course is extremely difficult, although different people will have trouble in different areas. However, everybody will have difficulty integrating all of the material. The information you learn in the first week of class is still needed in the last week of class. You cannot forget anything.

To do your best, you may need to adopt new strategies, such as:

- 1) Review material frequently.
- 2) Practice problems every day, because problems force you to keep thinking about what you saw in class.
- 3) Read the textbook before coming to class. Go back and read specific areas only when you have trouble with a specific section.
- 4) Do not dive into long studying periods right before PSAs; this practice produces higher anxiety and lower performance.
- 5) Study groups may be useful, but only if everyone comes prepared. Study groups can do practice problems, quiz each other, etc.

Some educational concepts that are particularly important to students in this course:

- 1) Spaced repetition: Memory has been shown to fall off quickly after material is first learned. Refreshing materials at longer and longer intervals after class (first several hours, then a day, several days, weeks...) leads to much higher retention of memorized material. You should use spaced repetition in your studying.
- 2) Guided inquiry: Studies show that students are most comfortable learning in a lecture / note-taking format. However, students later perform better if they have worked in teams to solve problems and develop the course concepts on their own, particularly if they are receiving feedback from an instructor at the same time. We will use aspects of guided inquiry in the classroom.
- 3) Prolonged practice: Studies show that the single biggest factor distinguishing one student's performance from another's is practice time. The idea that some students are much smarter than others is a myth at the college level, since all of you have been selected for admission based on some common criteria.
- 4) Perseverance: The threshold level of practice needed to excel at most activities, including science, is really quite high. That means the practice you put in on this course may not pay off with a desired grade in this class, but it will directly influence your performance in classes next semester and after that (even if the material is different). Keep a long-range goal in mind.
- 5) Taxonomy of learning: There are many different skills needed in most college-level courses: a) memorizing facts; b) describing ideas or illustrating an idea with a comparison; c) applying ideas and facts to new situations; d) analysing new information; e) putting different concepts together in new ways; f) making judgments about new information. We will work on developing all of these skills in this course. The SAPs in this class are really exercises designed to give you opportunities to apply the course material in a variety of ways, rather than just showing me how good you are at organic chemistry.
- 6) Focus vs. time put in: It is easy to spend lots of time in front of a textbook, but your attention must be focused in order for your effort to be any good. That means choosing the time and place to study that really works and taking breaks when you need them (e.g. a 20 minute break after an hour of solid work). It also means listening to all those things your mom keeps telling you about getting enough sleep, eating a variety of foods, and exercising regularly.