

Chem 315: Reactivity III
Syllabus
Spring 2013

Instructor: Dr. Chris Schaller, Ardolf 243, ph. 363-5312, cschaller@csbsju.edu
Office Hours: Odd days at 9:40; Day 2 & 6 at 1 pm; usually also available during middle of lab (2-4 pm days 1 & 5); drop-ins are OK other times

Course Materials:

- Textbook: Chemistry 315 Custom Book (available in bookstore)
- OWL: **Two Online Homework Passcodes:**
 - 1) Hornback (purchased last semester)
 - 2) Garrett & Grisham (purchased last semester)
- Workbook: *Principles of Reactivity 3 Workbook*
Please order a black and white printed version from Academic Pub. Follow the link below:

http://academicpub.sharedbook.com/serve/ac/acapub/student_product_page.html?slug=1355774838_19_605

Online Texts: Readings and problems from UC Davis, Michigan State, etc. See daily schedule (Our own site provides information on some topics at <http://employees.csbsju.edu/cschaller/srobi.htm> but has only limited material for this course).

Course Description: This course is an integrated look at reactivity patterns across chemistry, with applications in organic, inorganic and biochemistry. The focus of this semester is those reactions that are not readily explained with the usual concepts of Lewis acid & base reactivity. We will also begin to look at more advanced applications through the use of case studies. Frequently, these applications draw on material from all aspects of Reactivity 1-3.

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 minima for letter grades:

A = 90%, B = 75%, C = 60%, D = 50%.

However, exact "cutoffs" will vary slightly.

Point Values For Assignments

Item	Value Per Item	Total Value
Team Homework	7 x 10 pts	70
Team Homework	5 x 20 pts	100
Online Homework	See Hornback, Garrett & Grisham OWL	160
Passports	12 x 5 pts	60
Presentation	1 x 30 pts	30
Weekly PSA	9 x 20 pts	180
Monthly PSA	4 x 40 pts	160
Final PSA	1 x 100 pts	100
Completing Evals	3 x 3, 1 x 4	10
Instructor Evaluation	3 x 5 pts	15
Peer Evaluation	3 x 5 pts	15
Self Evaluation	3 x 5 pts	15
Extra Credit	2 x 10 pts	(20)
Total		915

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 healthy foods, and exercising regularly.