CHEM 221 FUNDAMENTALS IN ORGANIC CHEMISTRY

Description This distance-learning course is designed to bridge the gap between general and organic chemistry and to prepare students better for CHEM 322a. The material and pace are designed to develop a foundation in organic chemistry (as opposed to the majority of American college sophomores who receive little or no exposure). CHEM 221 is also recommended for those who struggled with general chemistry or who may have not taken it for a few years. This class will focus on problem-solving skills and understanding the language of organic chemistry.

Instructors	Dr. Rebecca Broyer	Dr. Thomas Bertolini
	<u>rbroyer@usc.edu</u>	<u>tbertoli@usc.edu</u>
	(213) 740-0620	(213) 740-3257

Office Hours Virtual office hours will be held exclusively online via Skype Mondays and Wednesdays from 2:45 – 4:00. Follow the instructions on the course website to register your Skype name (and to download and install Skype if need be) by clicking on "Office Hours". Do not arrive in person at Dr. Broyer's or Dr. Bertolini's office since they will likely not be there.

Course	https://chemmac1.usc.edu/221/
Website	

Web and	Dr. Bruno Herreros
Technical	<u>herreros@usc.edu</u>
Issues	

- **Prerequisite** A passing grade in CHEM 105b (second semester general chemistry) or equivalent course.
- **Credit** 2 units, P/NP; this course cannot be taken for major or general education credit.
- **Lecture** MTWTh 1 2:35 pm, exclusively online
- **Computing** An internet connection and Flash are required. Webcam, headset and microphone are suggested for use during office hours on Skype. Online assignments are submitted exclusively via the course website. Further computing details can be found on the course webpage.
- **Materials** There is no required textbook for this class. All required materials are provided electronically.

Optional i. Organic Chemistry I: Translating the Basic Concepts, by Klein

Materials ii. Any molecular modeling kit

The Klein text is very inexpensive and highly recommended. Dr. Bertolini also recommends it to his CHEM 322a class because many students prefer it to the course text. Molecular models are very useful for understanding stereochemistry **and most professors allow you to use them during exams.**

- **Assignments** Assignments include online homework, web quizzes and the final exam. Students who miss three or more assignments or who miss the final will automatically receive a grade of No Credit for the course regardless of their performance.
- **Polling** Daily in-class participation will be monitored using our **online** (no clicker is needed) polling system. Students receive 5 points for every lecture in which they participate in the polling, regardless if answers are correct. Responses will only be recorded if you are logged-in live during the class; you will not be awarded points if you view the video of the lecture at a later time.
- **Homework** Homework is assigned Mondays through Wednesdays and reflects material covered in lecture each day. Homework assignments unlock at the end of a lecture and must be submitted to the class website within 48 hours after they open. Late assignments will not be accepted for any reason.
- **Webquizzes** Four weekly multiple-choice webquizzes will be given to assess your understanding of the course material. Webquizzes open on Thursday 2:30 pm and must be submitted by Friday at 11:59 pm PST. You may only open a webquiz once; once opened a 60-minute countdown immediately begins that cannot be paused, even if you log off.
- **Final Exam** The final exam will be administered online Friday August 3, 2012 from 1:00 pm 3:00 pm PST. You must be logged in **at this time only** in order to take the exam. The final is online and has a multiple-choice format.

	Total		580	points
	Final	1 1	100	noints
	Web Ouizzes	40 points \times 4 guizzes	160	points
	Homework	20 points \times 12 assignments	240	points
Grading:	Participation	5 points \times 16 classes	80	points

You must earn 290 points in order to pass this class.

- **Bulletin Board** There is a bulletin board found on the course website. Feel free to post courserelated questions at any time, so all students can benefit from them. Remember that this is a public forum and personal matters should be directed to instructors by email. Instructors will post a reply to student questions within 24 hours.
- Academic USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of Integrity others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. Scampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions located Appendix are in A: http://www.usc.edu/dept/publications/SCAMPUS/gov/. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: http://www.usc.edu/student-affairs/SJACS/.

Disabilities	Any student requesting academic accommodations based on a disability is required
	to register with Disability Services and Programs (DSP) each semester. A letter of
	verification for approved accommodations can be obtained from DSP. Please be
	sure the letter is delivered to Dr. Broyer or Bertolini as early in the semester as
	possible. DSP is located in STU 301 and is open 8:30 a.m5:00 p.m., Monday
	through Friday. The phone number for DSP is (213) 740-0776.

ImportantLast day to add: Thursday, July 12, 2012DatesLast day to drop without a "W": Thursday, July 12, 2012Last day to drop with a "W": Monday, July 27, 2012Final Examination: online Friday, August 3, 2012 1:00 pm-3:00 pm PST

Tentative Schedule

Week of	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
July 9	Introduction	Hybridization	Structural	Molecular
	Lewis Structures	VSEPR Theory	Formulas	Geometry and
				Polarity
	HW#1	HW #2	HW #3	QUIZ 1
July 16	Arrow Pushing	Resonance	Acids and Bases	Alkanes and
				Cycloalkanes
	HW #4	HW#5	HW#6	QUIZ 2
July 23	Functional	IUPAC	Conformations	Stereochemistry
	Groups			R/S Notation
	HW #7	HW #8	HW #9	QUIZ 3
July 30	Stereochemistry	Substitution	Elimination	NMR
	Isomerism			
	HW #10	HW #11	HW #12	QUIZ 4

More Problems The following are suggested practice problems from the Klein text listed by lecture number. These will greatly improve your understanding of the course material, however they will be neither collected nor graded.

- **1**. 1.34 45, 1.47 52, 1.54 1.68
- **2**. 4.2 4.8, 4.10 4.17
- **3.** 1.2 1.11, 1.13 1.24
- **5**. 2.2 2.12
- **6**. 2.14 2.19, 2.21 2.28, 2.32 2.73
- **7.** 3.2 3.5, 3.7 3.12, 3.16, 3.19 3.31, 3.33, 3.35 3.37, 3.39 3.46
- **10**. 5.19 5.26, 5.29 5.34, 5.36, 5.37, 5.47, 5.48, 5.50 5.55, 5.57 5.59, 5.61, 5.65, 5.66
- **11**. 6.2 6.7, 6.9, 6.10 6.14, 6.16 6.21, 6.24 6.29, 6.31 6.36, 6.38 6.45
- **12,13** 7.2 7.7, 7.9 7.12, 7.14, 7.15, 7.17 7.19, 7.21, 7.22 7.35, 7.37 7.42, 7.44 7.47, 7.51 7.53, 7.65 7.70, 7.72 7.74, 7.76 7.81
- **14**. 8.9, 8.10, 8.14, 8.23, 8.24, 9.2 9.5, 9.7 9.10, 9.13 9.17, 9.20, 9.22 9.24, 9.29 9.33
- **15**. 8.11, 8.12, 10.1 10.4, 10.6 10.9, 10.11 10.14, 10.23 10.27, 10.29 10.31, 10.33 10.36