

- Instructor:** Dr. Ronald K. Castellano (castellano@chem.ufl.edu), Sisler 201, 392-2752
- Required texts:** *The Art of Writing Reasonable Organic Reaction Mechanisms*, 2<sup>nd</sup> Edition, by Robert Grossman, ISBN 0387954686 (**available as an e-book through the UF Library website**) and *Strategic Applications of Named Reactions in Organic Synthesis*, by László Kürti and Barbara Czako, ISBN 0124297854
- Recommended:** Any recent sophomore organic chemistry textbook (UF uses *Organic Chemistry* by Brown, Foote, Iverson, and Anslyn)
- Books on-line:** All available from SpringerLink (<http://www.springerlink.com>): a) *Name Reactions: A Collection of Detailed Reaction Mechanisms*, J. J. Li; b) *Advanced Organic Chemistry Part A: Structure and Mechanisms*, F. A. Carey and R. J. Sundberg, 5<sup>th</sup> Edition, 2007; c) *Advanced Organic Chemistry Part B: Reactions and Synthesis*, F. A. Carey and R. J. Sundberg, 5<sup>th</sup> Edition, 2007
- Books on reserve:** Sign in to <https://ares.uflib.ufl.edu/> to see the books available for two-hour check-out at the Marston Science Library. You will find the above texts plus: a) *Name Reactions and Reagents in Organic Synthesis*, B. P. Mundy, et al.; b) *Named Organic Reactions*, T. Laue, et al.; c) *Writing Reaction Mechanisms in Organic Chemistry*, A. Miller, et al.; d) *Advanced Organic Chemistry: Reactions, Mechanisms, and Structure*, 6<sup>th</sup> Edition, M. Smith and J. March
- Lectures:** M, W, F (see the course schedule), 2<sup>nd</sup> period (8:30–9:20 a.m.) in Pugh Hall 120
- Problem session:** R (6:15–7:45 p.m.) in Pugh Hall 120
- Office hours:** M and W (3:00–4:00 p.m.) in Sisler 201 (*other times by appointment*)
- Website:** <http://lss.at.ufl.edu/> (*updated regularly with announcements, exam scores and information, handouts, lecture notes from class, etc.*)
- Course objective:** To learn the fundamental principles necessary to read, understand, and critique the scientific literature in the field of organic chemistry.

**Grading and dates:**

Grading <sup>a</sup>		Exams <sup>d</sup>	
Exam 1	20%	Exam 1	9/27/12
Exam 2	20%	Exam 2	11/1/12
Problem sets <sup>b</sup>	10%	Final exam <sup>e</sup>	12/12/12
Problem sessions <sup>c</sup>	20%		
Final exam	30%		

<sup>a</sup> Consult <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx> for standard UF policies concerning the assignment of grades.

<sup>b</sup> Problem sets are collected and graded on a five-point scale (5-high; 1-low).

<sup>c</sup> Participation (10%) and name reaction summaries/presentations (10%).

<sup>d</sup> All exams will be held in PUGH 120. Exams 1 and 2 will begin at 6:15 p.m.

<sup>e</sup> The final exam is currently scheduled for 3–5 p.m. We may move the day and time if it is mutually agreeable.

- Attendance:** Lecture and problem session attendance is mandatory. If you must miss a lecture, you can find the course notes (as offered in class) posted as a PDF file on E-learning.
- Make-ups:** There will generally be no make-up exams given. *Very rare exceptions have been made for students who must miss an exam due to a University-sponsored event that is a) properly documented, b) unavoidable, and c) discussed with me well in advance of the exam date.* Late problem set assignments will not be accepted.
- Disability resources:** Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.
- Classroom etiquette:** Please **come to class on time** and adjust your cell phone so that it does not ring. *If you come late to an exam you will not be given additional time.*

**CHM 5224 Basic Principles for Organic Chemistry**  
**Fall 2012**  
**Course Schedule and Additional Details**

Lecture Dates	Lecture Topic(s)	Suggested Chapter Reading	Problem Set*
8/22, 8/24, 8/27	Functional Groups, Lewis and Resonance Structures, Mechanisms and Curved Arrow Formalism, AOs and MOs, Hybridization	Grossman: 1 Brown**: 1 C+S (A)***: 1.1.1–1.1.3, 1.1.8, 1.2.1, Topics 1.1 and 1.2	Set #1 (8/23)
8/29, 8/31	Conjugation, Aromaticity, Tautomerism, Acidity and Basicity	Brown: 4, 21.1–21.2 C+S (A): 1.1.7, 1.2, 8.1, 8.3, 8.6	Set #2 (8/30)
9/5, 9/7	Reaction Energetics, Stereochemistry and Conformational Analysis	Brown: 2.5–2.6, 3 C+S (A): 2.1.1–2.1.7, 2.2.1, 2.2.2, 2.4 (intro), 3 (intro), 3.2.1, 3.2.2.1, 3.3.1, 3.3.2.2	Set #3 (9/6)
9/10, 9/12	Stereochemistry and Conformational Analysis, cont'd		Set #4 (9/13)
9/14, 9/17, 9/19, 9/21, 9/24	Substitution and Elimination Reactions, Aromatic Substitution	Brown: 9 Grossman: 2.1, 3.1, 3.2 C+S (A): 3.4.1, 4.1–4.4, 5.10	Set #5 (9/20)
9/26, 10/1	Aromatic Substitution, Alkene Addition Chemistry	Brown: 6, 22 Grossman: 3.3, 3.4 C + S (A): 9.1, 9.2, 9.4, 9.5, 11.6.1	<b>Exam #1</b> <b>(9/27)</b>
10/3	Alkene Addition Chemistry	C+S (A): 2.4.2, 5 (intro), 5.1–5.3 + 5.5, 5.6.1, 5.7.1–5.7.2, 5.8	Set #6 (10/4)
10/5, 10/8, 10/15	Carbenes, Carbenoids, Radicals, Carbonyl Addition Reactions	Brown: 8, 15.3 Grossman: 2.4.5, 5 C+S (A): 3.4.3, 11 (intro), 11.1.4–11.1.6, 11.2–11.4 (basics)	
10/17, 10/19, 10/22, 10/24	Carbonyl Addition Reactions, Organometallic Reagents and Reactions, Transition Metal Chemistry	Brown: 15.1–15.2, 16 Grossman: 2.2.1, 2.3.1, 2.3.3, 2.4.4 C+S (A): 2.4.1, 3.4.4, 6.2, 7 C+S (B): 7.1, 7.2, 8.1, 8.2, 8.4	Set #7 (10/18)
10/26, 10/31	Oxidation and Reduction, Alcohol Chemistry	Brown: 10 Grossman: 2.6.1 C+S (A): 2.4.1	Set #8 (10/25)
11/2, 11/5	$\alpha$ -Carbonyl Chemistry, Kinetic vs. Thermodynamic Enolates	Brown: 19 Grossman: 2.2–2.3 C+S (A): 6.3, 6.4, 6.5.2	<b>Exam #2</b> <b>(11/1)</b>
11/7	Condensation Reactions	Brown: 24 Grossman: 4, 6.1, 6.3.4 C + S (A): 7.7	Set #9 (11/8)
11/14, 11/19	Problem Set #10 (due 11/19)		
11/26, 11/28, 11/30	Pericyclic Reactions	C + S (A): 10	Set #11 (11/29)
12/3, 12/5	Pericyclic Reactions		<b>Final Exam</b> <b>(12/12?)</b>

\* Problem sets will be posted about one week before the associated problem session. Problem Set #1 is already on-line. Problem sets must be handed in immediately following the problem session on the date shown.

\*\* The sophomore organic chemistry textbook that we use at UF (Brown, Foote, Iverson, and Anslyn). You can use any similar textbook that you have access to; I have several in my office that can be borrowed.

\*\*\* This course covers the **basics** of organic chemistry with some additional detail (beyond sophomore organic chemistry) in isolated cases. It is *recommended* that you use Carey and Sundberg to educate yourself further on the topics that we cover in class, but the material covered on the exams will largely come from the in-class notes, assigned homework problems, assigned name reactions, etc.

**The UF Student Honor Code** (see the UF Student Guide (<http://www.dso.ufl.edu/studentguide/>) for details): *We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."*