

**University of California, Santa Cruz, Department of Chemistry & Biochemistry**  
**CHEM 8B: Organic Chemistry**  
**Winter 2018**

**Instructor:** Caitlin Binder, Ph.D.

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**Office Hours:** Tuesdays 1-2 & Thursdays 12-1 in PSB 257

\*No office hours or discussions 1/30, 1/31, 2/20, 2/21

**Teaching Assistants** – office hours TBA

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**Lecture:** TuTh 8 – 9:35 a.m., Classroom Unit 2 - Lecture & exam schedule on page 3.

**Discussions:** Consistent attendance to discussion sections is vital to your success in organic chemistry. Prepare for discussion by attempting, if not completing the most recent HW assignment. Quizzes are given in discussion from the homework (see more on quizzes on p. 2). Section switching after the drop/add period is discouraged but you may ask your TA to attend a different discussion for the remainder of the quarter. Do not jump around to different sections each week! *No discussions Jan 15, 30, & 31 or Feb 19-21 – no quizzes or need for makeups.*

**Required Materials**

- J. McMurry, Organic Chemistry, 8<sup>th</sup> Edition, Cengage 2012
- Study Guide and Student Solution's Manual for McMurry Organic Chemistry, 8<sup>th</sup> Edition
- Separate notebook for homework only – allowed during quizzes
- *Optional but Highly Recommended:* Molecular Model Kit for Organic Chemistry

**Students with Disabilities** - If you qualify for classroom accommodations because of a disability, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me as soon as possible, preferably within the first week of the quarter. Contact DRC by phone at **831-459-2089** or by email at [drc@ucsc.edu](mailto:drc@ucsc.edu) for more information.

**Academic Integrity** - *Students will take their own individual quizzes and exams without additional resources (cheat sheets, phones, etc). Communication between students during exams in any form will not be tolerated.* Students found participating in such behavior will be promptly removed from the exam or discussion room and at minimum given a zero on that quiz or exam. See [www.ue.ucsc.edu/academic\\_integrity](http://www.ue.ucsc.edu/academic_integrity) for campus policies on this topic.

**Learning Resources** - Course Website ([acrochem.sites.ucsc.edu](http://acrochem.sites.ucsc.edu)) – syllabus, lecture handouts, practice exams, updated syllabus, study tips, TA office hours schedule, etc.

MSI offers large and small group tutoring sessions with Leobardo Gonzalez ([lgonza21@ucsc.edu](mailto:lgonza21@ucsc.edu)) and Maritza Martin ([mayumart@ucsc.edu](mailto:mayumart@ucsc.edu)) starting the second week of class. Schedule and sign-up info announced in lecture and posted online. Webcasts of lecture audio and projections are available at [webcast.ucsc.edu](http://webcast.ucsc.edu) to review material and supplement lecture notes. **Username:** chem-8b **Password:** @croCh3m

**Course Description** - CHEM 8B is the second quarter of organic chemistry and builds on the structural and reactivity conventions of organic compounds learned in CHEM 8A. Students gain the ability to distinguish between nucleophiles and electrophiles to understand instead of memorize synthetic organic reactions, including those of aromatic compounds, alcohols, and carbonyl compounds. This lays the foundation for understanding the reactivity of more complex biomolecules such as carbohydrates, proteins, and lipids.

**Study Expectations and Advice** can be found in a separate post online. The learning process is fascinating and complex. It requires dedication, balance, and patience. Please take the time to **READ THIS POST TO SET YOURSELF UP FOR SUCCESS** in this class!

**Lecture Etiquette** – *please treat instructors and fellow students respectfully.*

- *Attendance at all class sessions is necessary for successful completion of this course.* It is 100% your responsibility to be present for lecture material and in-class announcements.
- Students write responses on exams and quizzes with pen and paper. Taking notes in lecture with the same tools helps in exam preparation. **Tablets are great but laptops are less useful for note-taking in organic chemistry.** These can be distracting to the instructor and other students, not to mention a tempting distraction for you! You will be asked to **put away laptops and cell phones during class unless otherwise discussed.**
- **Webcasts** are intended to allow students to review material, supplement lecture notes, and help with homework. It unnecessary for students to take pictures or video during class (not approved by instructor). *Webcasts are not intended to be a regular substitute for lecture, as you are far more likely to engage in the material in person and are able to ask questions.*
- You are responsible for the material if you miss lecture – get notes from a classmate and/or watch the webcast. I do not give out lecture notes. Please do not email to ask me if I went over anything important in lecture - it's all important!!
- You are welcome to ask questions in lecture. Otherwise, no talking during class.
- Come to class on-time, stay for the duration. **Please wait to pack up until I have dismissed the class.**

### **Assignments and Grading**

- *Textbook reading assignments* are given in the lecture schedule on page 3. **Reading Questions** pertaining to assignments are posted online to help make efficient use of your reading time before lecture.
- **Homework** completed in a designated, bound notebook can be used during quizzes. **Although not turned in for credit, HW your most pivotal assignment to aid in your understanding of organic chemistry.** HW sets for each lecture are on page 3 with 'due' dates. Quizzes and many exam questions come directly from homework.
- **Quizzes (300 points, 30%)** are given anytime during discussion and are unannounced. The material in the quizzes is directly from the homework 'due' that week. *You can use your HW book during quizzes but no other reference tools (no text or lecture notes).* You must attend your enrolled section for quiz credit. One make-up quiz is considered with good reason but only if students email the TA before section starts. Email your TA with a brief reason along with your section information, and days/times you are available for a make-up within the same week. Section info posted on course website.
- **Midterm Exams (400 points, 40%)** are comprehensive assessments that review in detail recently covered topics. Each exam builds on material found on previous exams. Questions are similar or identical to HW and in-class examples. No make-ups, no exceptions.
- **The final exam (300 points, 30%)** is three hours and cumulative with a greater focus on chapters not covered on the midterms. Pay attention to in-class announcements about exams. **The final exam date is Monday, March 19, 8 – 11 am in Classroom Unit 2. There will be no make-ups exams, no exceptions! Plan accordingly.**

### **Typical Grade Distribution**

**Passing = A 90.00-100%; B 75.00-89.99%; C 60.00-74.99%**

**Not Passing for Major Requirement: C- 55.00-59.99%; D 50.00-54.99%; F < 50%**

I typically do not need to curve exams. Try not to focus on the grade and just do your best!

Plus (+) and minus (-) grades are used in special cases based on final exam scores.

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**LECTURE SCHEDULE**

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\* Use **Reading Questions** online to focus your preparation for lecture.

<b>Dates</b>	<b>Reading* (McMurry8)</b>	<b>Lecture Topic</b>	<b>Lecture No.</b>
Tu 1/9	16.1-3	Introduction; Aromatic Chemistry	1
Th 1/11	16.4-5	Aromatic Chemistry	2
Tu 1/16	16.6,9-11 17.1-3	Aromatic Chemistry Properties of Alcohols & Phenols; Rxn Review	3
Th 1/18	17.4-7	Synthesis and Reactions of Alcohols	4
Tu 1/23	18.1-3,5-6	Ethers & Epoxides	5
		<i>Before Lecture 6, read p. 712-716</i>	
Th 1/25	19.1-7	Aldehydes & Ketones: Nomenclature, Synthesis, Oxidation, Nucleophilic Additions	6
<b>Tu 1/30</b>	<b>EXAM 1</b>	<b>Chapters 16-19.7</b>	<b>1-6</b>
		<i>Before Lecture 7, read p. 717-720.</i>	
Th 2/1	19.8-11	Aldehydes & Ketones: Nucleophilic Addition of Alcohols & Amines	7
Tu 2/6	20.1-7	Carboxylic Acids & Nitriles	8
Th 2/8	21.1-4,6-7	Nomenclature and Reactions of Acid Chlorides, Esters, and Amides	9
Tu 2/13	22.1-6	Introduction to Enols and Enolate Chemistry	10
Th 2/15	23.1-3	Self-Aldol Condensation; Enones	11
<b>Tu 2/20</b>	<b>EXAM 2</b>	<b>Cumulative, Focus on Chapters 19-24</b>	<b>1-11</b>
Th 2/22	24.1-8	Amines	12
Tu 2/27	25.1-4	Carbohydrate Nomenclature	13
Th 3/1	25.5	Carbohydrate Nomenclature	14
Tu 3/6	25.6	Reactions of Carbohydrates	15
Th 3/8	26.1-2	Amino Acid Structure & Titration	16
Tu 3/13	26.3-5,7	Amino Acids Synthesis, Peptide Primary Structure & Synthesis	17
Th 3/15	27.1-3, 27.5	Lipids	18
		<b>Cumulative, Classroom Unit 2</b>	
<b>Monday 3/19</b>	<b>FINAL EXAM</b>	<b>8 – 11 am</b> <b>*NO MAKE-UP EXAMS, NO EXCEPTIONS*</b>	<b>1-18</b>

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**1/29** – Last Day to Drop; **2/20** – Last Day to Withdraw, 'W' on transcript

\*\*DRC Students – check your class schedule to make sure there are no conflicts with the extended time you may receive for exams, especially overlaps with labs.

**Homework** – see Study Expectation & Learning Advice online

Homework is not checked for credit. It is entirely up to you to check with the solutions manual on your own. HW will be the focal point in discussion sections and you can refer to your HW notebook during quizzes. Quizzes are given on HW due on or before the dates below. Plan on completing or at least starting each homework set the same day of the lecture for that chapter instead of waiting for the due date. Do not fall behind on this.

**Write the question in pen**, your response in pencil, then **self-grade your homework using red pen** with the Solutions Manual or the back of the text *after* giving your best attempt at the problem set (read lecture notes and related text sections first). **You should not consider your homework complete without grading notes**, with at least a check if it's correct. Do not rely too heavily on the Solutions Manual – it does have some mistakes. **Clarifications, alternate solutions, and corrections to certain problems are addressed in a separate post on the course website.**

Lecture	Chapter	Assigned Problems - McMurry 8 <sup>th</sup> Edition <i>(Clarifications to solutions manual for italicized problems online)</i>	'Due' Date*
1	16	1,3-7	1/16-1/19
2	16	8-13, 28, 29, 36, 37 (10,12)	Mon section's HW due next week**
3	16 17	14, 18, 20, 22, 23, 51, 68, 72 (22d, 23b, 68a) 2, 4, 6	1/22-1/26
4	17	7-10, 12-15, 30, 34, 35, 41 (7c, 14ac, 41)	
5	18	3, 5, 7, 14, 23, 25a-d, 28, 30acde, 43, 55 (3,28,30de,55)	1/29, 2/1-2/2
6	19	2-5, 7, 40bdef (3c, 4cd, 5, 7)	TuW section's HW due next week**
<b>↑ Problems for Exam 1</b>			
7	19	10, 11, 13, 14, 16, 17, 40gh, 48, 58 (11, 14, 48)	2/6-2/9
8	20	2(skip e),7,9a,10,11,13,26,33,35,48,57 (33cde,35a, 48)	
9	21	2a-f, 3-5(skip 5d), 7, 9, 11-13, 17-21, 34-36, 38, 62 (5a,7,9,11,12,20b,36c,38aeg)	2/12-2/16
10	22	1, 2, 4-6, 20-22, 24, 25cd, 30, 34, 45abef (5, 45f)	2/22-2/23
11	23	1, 3-4, 27, 29	MTuW section's HW due next week**
12	24	2a-e,4 6, 8, 9, 11, 17,19, 36a-e, 40(skip d), 47cd, 50ade (36bc)	2/26-3/2
<b>↑ Problems for Exam 2</b>			
13	25	Carbohydrate Worksheet #1-4 (online)	
14	25	Carbohydrate Worksheet #5-6 (online)	3/5-3/9
15	25	16-23, 43, 66	
16	26	Practice amino acid titrations (pH 0-14) given pKa values	3/12-3/16
17	26	3, 5, 9, 32, 38a Amino Acid & Peptide Problems (online)	
18	27	1-5, 15, 17, 20-22, 25, 35, 40, 46 (40)	Before the final!
<b>↑ Problems for Final Exam</b>			

\* HW assignments are not checked for credit, but there may be a quiz in section directly from HW due on or before the dates above. You must attend discussion to get credit for the quiz, no exceptions.

\*\*There are no discussions on holidays, exam days or the day after (1/15, 1/30, 1/31, 2/19, 2/20, 2/21). The quiz schedule was worked out so students missing discussions on these days do not need to schedule a makeup quiz. You are welcome to attend a different section that week - do not take their quiz!