CHEM 343: Introductory Organic Chemistry

Contact Information
Matt (Doc) Bowman
262-2519
Chemistry 5232
bowman@chem.wisc.edu
(Please include Chem 343 in the subject line).

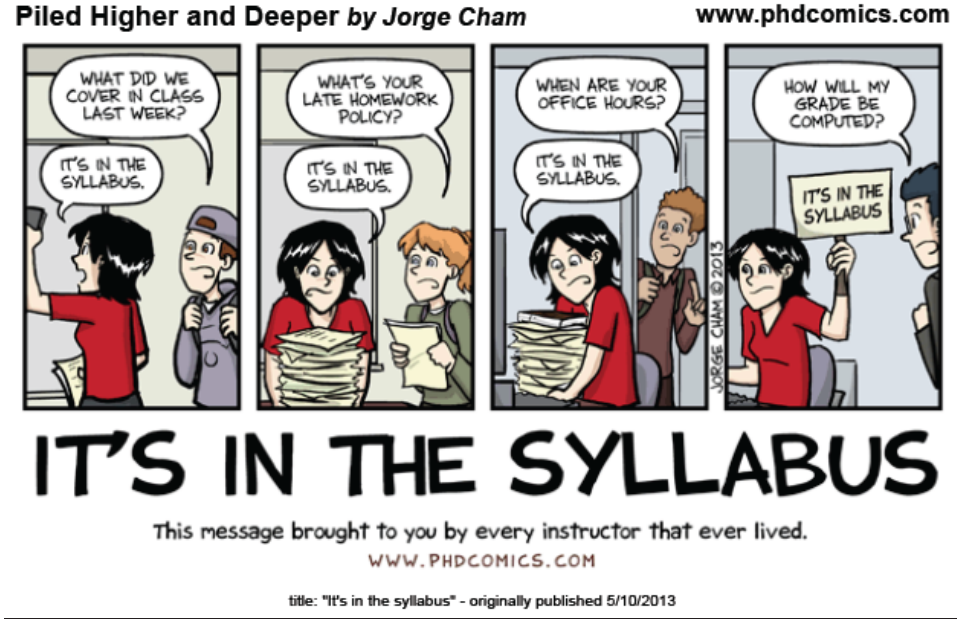
3 credits: Lecture 50 min three times per week
Discussion 50 min once per week

Lecture 5:
MWF 1:20-2:10 PM
Room: Psych 105

Office Hours
Scheduled
Mondays 3:30-5:25 PM in Chamberlin 2135
Wednesdays 9:55-10:45 AM in Noland 342
Wednesdays 2:25-3:15 PM in Psych 130
(or by appointment)

Teaching Assistants

Moira Esson	messon@chem.wisc.edu
Dr. Aaron McCoy	amccoy@chem.wisc.edu
Younghee Shin	yshin@chem.wisc.edu



TA Office Hours

TA office hours on the day following exams will be cancelled as the TA's will be grading then.

TA office hours are held in Chemistry B317 (Organic TA Office)

Moira Essen
4:35-5:25 pm Monday
3:30-4:20 pm Wednesday

Aaron McCoy
9:55-2:10 pm Thursday

Younghee Shin
8:50-9:40 am Monday
8:50-9:40 am Friday

Matt's Schedule:

Matt Bowman this fall is lecturing for two courses Chem 343 and Chem 341. There are 310 students in 343 and 120 students in 341. Matt will try to keep everything straight, but will not remember necessarily which student is in which lecture. These lectures are almost back to back and at first contain very similar material, but halfway through the semester diverge. At which point, any vestiges of his sanity will disappear. (His sanity is not being helped much right now as Matt Bowman writes in the third person). Please state in any email correspondence with him whether you are in 341 or 343. The answer to your questions may differ significantly. Please be patient. If he does not respond within 12 hours, try again. There will be separate office hours for 343 and 341. Please come to the correct one.

Textbook: *Organic Chemistry*, 5th Ed., Marc Loudon
Quite a few of my course evaluations in the past stated that they never read or opened the book. I do not recommend this course of action, but I do understand it. I follow a different order than the textbook, but the material from Chapters 1-11 and 14-15 will be covered. The course schedule has page numbers containing relevant information from the text along with key words that you can use in an index of any organic textbook for other explanations. Copies of the textbook are on reserve in the chemistry library for you to read. Instructors of Chem 344 and 345 may expect you to have this textbook for these future courses. Exams and quizzes are based on the material from lectures, power point tutorials, video lectures, discussion sections, and problem sets. The book is there to provide alternative explanations/approaches to help you understand the material covered.

Powerpoint tutorials
There is some subject matter that can be best explained by the book or a simple powerpoint tutorial. These tutorials are available at Learn@UW. Please go through them ***by*** the indicated date on the course schedule. If you do not have access to powerpoint, there is a computer lab in Chemistry 1375. These computers have powerpoint. The lab is open from 8:30 am to 6:30 pm Monday through Thursday and is open from 8:30 am to 4:30 pm on Friday.

Video lectures
Learn@UW will host a variety of video lectures. These are typically 5-10 minutes long. They are there to highlight important concepts or clarify points in organic chemistry.

Problem sets
There will be a problem set for each lecture day except for the day of an exam or the day preceding an exam. These problem sets will not be graded and are there to help you out. Keys will be available by the next lecture day on Learn@UW.

Practice exams
I will make at least three practice exams available for each exam. The exams will be very similar to the practice exams in terms of directions. Answer keys for these exams will also be available. **DO NOT SIMPLY LOOK AT THE KEY. ATTEMPT THE PRACTICE EXAM FIRST. HAVE ANOTHER STUDENT IN THE CLASS GRADE IT AS YOU GRADE THEIRS. DISCUSS DISCREPANCIES AND ONLY THEN LOOK AT THE KEY.**

Grading (As transparent as I can be)

The grade will be based on exams participation points.
The maximum number of points available will be 630 points.

ABCDF SIMPLY STATED

If you earn 90% of the total points, you will receive an A.
If you earn 77% of the total points, you will receive *at least* a B.
If you earn 57% of the total points, you will receive *at least* a C.
If you earn 40% of the total points, you will receive *at least* a D.

So if you receive an 88%, this can be an A, AB, or B depending on the final distribution. 89.5% is considered to be 90%. 89.49999999999999999999999999999999999999999999999999999999999999999999999999999999999999999% is considered to be 89%. That is just how it is.

The actual lines are determined by a mixture of factors: final distribution, the historical grade history of all of the sections of Chem 343, the phase of the moon, where the darts end up on the board, improvement in the course, etc… There are a few things that I can say with certainty:
The 40% line is a hard line. Any score below that will be an F. *Regardless what exam averages are.*
The C line will never be lowered below 50%. A 52% may be a C or D.

Confusion about curves and AB's and BC's. The AB range and BC range is very small. Historically for organic chemistry it is small. For my classes, it has typically been one or two percentage points.

The cutoffs represented above are the curve. This is based on several semesters of organic chemistry, so you know how you are doing throughout the semester. The lines may dip a little, but not much. Especially the A line. The last few times I've taught, it has barely budged. Please do not be surprised if your total points are 85% and your letter grade is a B. If the lines are lowered, they will be lowered so that **25% of the class will receive at least an AB and 35% of the class will receive a B or BC. The DF line will not move and the C line will never dip below 50%.**

Exams:
There are four regular exams plus the final exam. Each regular exam will be worth 100 points. The regular exams will be Monday evening exams held from 7:15 to 8:45 pm in a lecture hall to be announced. Please check your schedules for potential conflicts. The dates are September 29, October 20, November 3, and November 24. Please notify me of any conflicts so alternative arrangements can be made. You may not drop any exam.
The final exam is worth 200 points and cannot be dropped.
It will take place on Friday, December 19 from 7:45 am to 9:45 am. Unfortunately, this date is set by the University and I can only grant makeup exams in a VERY limited manner such as two exams within a 24 hour period. Please do not ask for a makeup exam due to airline tickets going home for Christmas. I'm afraid that is not listed as a valid reason.

Exam regrade policy: Mistakes in exam grading will occasionally be made. You will have one week after exams are returned to submit the entire exam for regrading. Keep in mind, since mistakes may or may not be in your favor, the exam grade can actually be lowered. All decisions on the regrades are final. **DO NOT UNDER ANY CIRCUMSTANCES CHANGE AN ANSWER AND SUBMIT IT FOR A REGRADE. THIS IS ACADEMIC MISCONDUCT AND WILL BE DEALT WITH HARSHLY.**

Regrade submittal procedure: Email Matt Bowman that you are submitting an exam for a regrade. Write on the exam score sheet which problem needs to be regraded and why. **DO NOT CHANGE ANYTHING ELSE.** Place the exam in Matt Bowman's mailbox in Chemistry 1146.

Participation Points:
Part of your grade will be determined by participation. There are a couple of ways that you can earn a participation point. First, is attending your assigned discussion section. You get one point each time you attend. You will earn a half point for every correct answer to an iclicker question. You can also earn a point by turning in a specified problem on a problem set into Matt's mailbox by the assigned date. There are other ways to be determined. There will be a maximum of 30 participation points that you can earn during the semester.

Academic Misconduct

You are all adults. There is no reason to cheat, but plenty of reasons not to. An **F** in the course is one of many reasons. Cheat sheets, notes, textbooks, someone else's paper, iPods, cell phones, a crystal ball bearing the disembodied spirit of the Great Organic Chemist R. B. Woodward, etc… are prohibited from the exam. Use of these prohibited materials during an exam will result in a zero for the exam score. A zero on an exam due to cheating cannot be dropped. You will only be allowed pencils/pens and model kits for the exams.

A percentage of the exams will be photocopied. Should an answer be changed and submitted for a regrading, academic misconduct has occurred and the perpetrator will receive an F in the course and be reported to the Dean's office.

I have been advised by the staff (some of them legal staff) that I cannot use pepper spray in dealing with wandering eyes. I will try to remember to remind the TAs proctoring the exams of that advice. If the TAs suspect anyone of this condition, they will announce for everyone to keep their eyes on their paper. If the problem persists, the TAs have the discretionary power to move any student suspected during an exam. Exams of adjacent students will be examined, and should there be ample evidence, lower exam scores including zeroes will be given to the perpetrator. Please fight against wandering eyes. Please shield your paper the best you can to remove any temptation from others.

Since iclickers will be used for points, there is the potential for academic misconduct there as well. Having someone click for you or using two or more iclickers during a single lecture is another example of academic misconduct. It will similarly be dealt with accordingly.

THERE ARE NO ACCEPTABLE EXCUSES FOR ACADEMIC MISCONDUCT. I HAVE CAUGHT SEVERAL STUDENTS AND THEY NOW HAVE A DARK MARK ON THEIR PERMANENT RECORD. I HAVE NO SYMPATHY FOR THOSE THAT CHOOSE TO CHEAT.

Study tips

Organic chemistry is very cumulative. Once you start, you cannot stop. (Oh and you need to start right away). Material on exam I will be tested again on exams II, III, IV, and the Final. Likewise, with subsequent topics. The problem sets will not only cover current material but past material as well.

Between 1-4 hours after each lecture, start the problem set. ***Do not wait for the answer key to be posted to start the problem set.*** Between 4-8 hours after each lecture, recopy your notes for that lecture. Look for the patterns.

In the course schedule, the relevant page numbers from the text are listed. The exams are going to be based on the material from the lectures, lecture notes, problem sets, and discussions. The text is there to help you understand the material. I strongly suggest that you read the relevant pages either before or after lecture.

Make flash cards. Carry these with you wherever you go. Flip through them throughout each day.

A very good way to study is to study in groups. Multiple problem sets will be available to work on along with several practice exams. I suggest you form groups to study in. You can go about this talking to classmates in discussion, lecture, etc… The sooner you set up these groups the better off you will be. If you wish a classroom to meet in, I can see about reserving one for you.

The best way to understand organic chemistry is constant practice. The TA's and I will do our best to provide quite a bit of practice in the form of problem sets and practice exams. Should you desire more practice, there are the problems at the end of each chapter in the book as well as multiple websites. Should you find a discrepancy in what the TA's, book, internet, or myself, please bring it to our attention immediately. It may be a case of a subtlety, an outright error, or an over generalization. Regardless, we'll try to explain the discrepancy.

Discussion Sections

Due to the generous funding by the Madison Initiative for Undergraduates and the College of Letters and Science, we are able to offer discussion sections. There is a lot of material to cover, and little time to cover it. Sometimes, what I can briefly cover in the lecture will be better covered in your discussion section. The TAs in this course have experience in teaching organic chemistry, through labs, discussion sections, and tutoring. They may have a different way of looking at a topic. As a result, if you do not understand something from me, you may understand it from them. All discussion sections are held in the chemistry building.

Section 381 Thursdays	8:50-9:40	B357	Moira Esson
Section 382 Thursdays	9:55-10:45	B357	Younghee Shin
Section 383 Thursdays	8:50-9:40	2373	Aaron McCoy
Section 384 Thursdays	3:30-4:20	2373	Moira Esson
Section 385 Thursdays	4:35-5:25	2373	Moira Esson
Section 386 Fridays	11:00-11:50	2373	Younghee Shin
Section 387 Fridays	12:05-12:55	B355	Younghee Shin
Section 388 Fridays	9:55-10:45	2377	Younghee Shin
Section 389 Fridays	11:00-11:50	2377	Moira Esson
Section 390 Fridays	12:05-12:55	2377	Aaron McCoy
Section 391 Fridays	9:55-10:45	B355	Aaron McCoy
Section 392 Thursdays	4:35-5:25	B383	Aaron McCoy

Proper use of discussion sections:

Make mistakes. People learn from mistakes. Be vocal. Go to the front of the board and write your answers. If they are correct, congratulations. If they are incorrect, *all the better* as it gives an opportunity to learn something and help out your fellow classmates. There are many correct answers in organic chemistry (and many more incorrect ones). The TA's are there to give insight on the nuances of organic chemistry.

Improper use of discussion sections:

Just sitting there.

Additional Help

In addition to the TA's and my office hours, there are a couple of places where you can find assistance.

The Organic TA Office is in room B317. There is a schedule posted outside the door of various TA's and when they will be available to help you. Feel free to ask any of them for help even if they are not a TA for Chem 343.

Alpha Chi Sigma Chemistry Fraternity has offered tutoring for chemistry classes in the past. Please contact them about their current help sessions.

GUTS offers tutors as well. They can be contacted at:
Student Activity Center
Office #4413
333 E Campus Mall
Madison, WI 53715-1380
Phone: 608-263-5666
E-mail: guts@rso.wisc.edu
http://guts.studentorg.wisc.edu/

There are also private tutors available. The General Chemistry Office (Room 1328) has a list of tutors and prices.

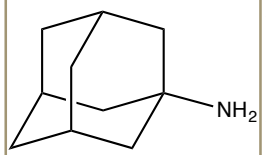
There are also private tutors available. The General Chemistry Office (Room 1328) has a list of tutors and prices. If you do work with a tutor, please let them know that I post notes, problem sets, practice exams, and tutorials on Learn@UW. Anyone can access the Learn@UW Chem 343 site by using the visitor login.
They should go to learnuw.wisc.edu and click on visitor login.
USER NAME: **orgchem.pseudo**
PASSWORD: **orgchem.pseudo**
They will be able to access any handouts using that login.

Peer Learning Association-University of Wisconsin-Madison

PLA is a student lead organization that offers additional help organized outside of class discussion. Lead by a facilitator who has already successfully completed chemistry 343 you will meet once a week and discuss the past weeks materials. For more information, email uwplastaff@gmail.com.

SEPTEMBER 2014 Chem 343

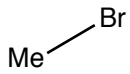
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
1 **Page numbers are from Organic Chemistry 5th edition Marc Loudon**	2	3 Periodic Trends and Lewis Structures Pages 1-13	4 **Tutorial: Nomenclature I Alkyl halides and alkanes**	5 Bonding/Molecular Interactions Pages 23-37 and 333-350	6 **Tutorial: Nomenclature II Alkynes, Alkenes, Benzene**	7
8 Hybridization Pages 13-20, 37-41, 123-124, 646-649	9 **Tutorial: Nomenclature III Functional Groups**	10 Resonance Functional Groups Pages 20-22, 709-715	11	12 Resonance Functional Groups	13 **Tutorial: Nomenclature IV Cycloalkanes and bicyclics**	14
15 Alkanes Conformations Pages 46-86	16	17 Cyclic alkanes Pages 268-297	18	19 Bronsted-Lowry Acid/Base Chemistry Pages 87-121 and 355-360	20	21
22 Lewis Acid/Base Chemistry Pages 87-121, 355-360	23	24 Stereoisomers Enantiomers Pages 226-267	25	26 Stereoisomers Enantiomers Pages 226-267	27	28 **Exam I Review 1-3 pm Spot Checks Union South 4-7 pm**
29 **Review Exam I 7:15-8:45 PM**	30					



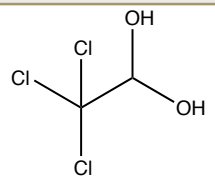
NOTES:

1-adamantylamine is an antiviral that was once used to treat influenza but no longer. Side effects include "nervousness, anxiety, agitation, insomnia, difficulty in concentrating" according to Wikipedia. Yep, 1-adamantylamine is definitely a molecule to associate with organic chemistry.

OCTOBER 2014 Chem 343

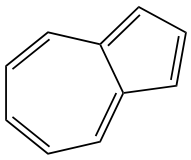
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
		1 Substitutions: S_N1 Pages 377-423 412-420, 440-442, 789-793	2	3 Substitutions: S_N2 Pages 377-378A, 381-389, 440-442	4	5
6 Substitutions: S_N1 vs. S_N2 Energy Diagrams 492-494	7	8 Eliminations: E2 Pages 378-380 and 400-411	9	10 Eliminations: E1 Pages 412-420 and 436-440	11	12
13 Carbocation Rearrangements Pages 439-441	14	15 S_N2 vs. E2 Ether Synthesis Pages 482-483	16	17 Alkynes C-C Bond Forming Reaction Pages 644-649, 662-668	18 **Exam II Review 1-3 PM**	19 **Spot Checks Union South 4-7 pm**
20 **Review Exam II 7:15 pm-8:45 pm**	21	22 Alkynes to Alkenes Pages 122-146, 659-662	23	24 Addition Reactions: HX and H_2O to alkenes Pages 147-166, 169-171B	25	26
27 Oxymercuration demercuration Pages 187-190, 484-485B, 654-656	28	29 Hydroboration Pages 190-196, 312-314, 657-659, 169-171B	30	31 HBr to alkenes Pages 200-214, 652-653		
		**NOTES:** **Bromomethane is a gas (boiling point 3°C). It is an excellent SN2 electrophile and a pesticide that was widely used in vineyards. It essentially alkyates DNA and the insect dies. Very toxic to us for the same reason. It also attacks the ozone layer. MeI is a likely substitute. Just as toxic, but the iodine radicals are less likely to break apart ozone than bromine radicals.**				

NOVEMBER 2014 Chem 343

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
					1	2 **Spot Checks** **Union South** **4-7 pm**
3 **Review** **Exam III** **7:15 pm-8:45 pm**	4	5 Cyclopropane Reactions Pages 424-428	6	7 Halogenation of alkenes Pages 181-185, 308-311	8	9
10 Epoxides and Neighboring Groups Pages 488-492, 495-499, 510-517	11	12 Grignard Organolithiums Pages 361-364, 500-503	13	14 Leaving Groups TsCl, PBr3, SOCl2 Pages 443-450	15	16
17 Alcohol Oxidation Hydrate formation Pages 452-461, 936-937	18	19 Osmium Tetroxide Periodic acid Pages 503-507	20	21 Ozonolysis Pages 503-507 **Exam IV Review** **6-8 PM**	22	23 **Spot Checks** **Union South** **4-7 pm**
24 **Review** **Exam IV** **7:15 pm-8:45 pm**	25	26 Radical Halogenation Pages 364-368	27 **No Classes**	28 **No Classes**	29	30
		**NOTES:** **Chloral hydrate is an example of a stable hydrate due to the presence of three electronegative chlorines destabilizing the aldehyde. It is widely used in 1920 crime novels as knockout drops or "Mickies." On a historical basis though, it is the cheap starting material for the infamous insectide DDT, which limited the spread of malaria and of the bald eagle.**				

DECEMBER 2014 Chem 343

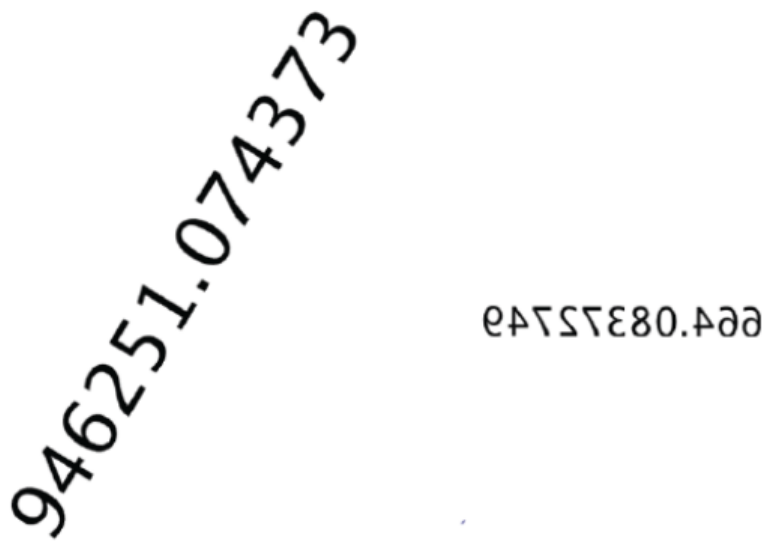
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
1 Conjugated Systems Pages 676-690, 700-709	2	3 Conjugated Systems Pages 676-690, 700-709	4	5 Diels-Alder Pages 690-700	6	7
8 Diels-Alder Pages 690-700	9	10 Aromaticity Pages 716-730	11	12 Review Last Day Email topics to Matt	13	14
15	16	17	18	19 **Final Exam** **7:45-9:45 AM**	20	21
22	23	24	25	26	27	28
29	30	31				



NOTES:

Azulene is an aromatic compound with a deep blue color. Even though it contains only carbons and hydrogens, it has a dipole moment of about 1.08 Debye. Dichloromethane's dipole moment is about 1.14 Debye. Where are the partial negative and partial positive charges?

Add these numbers together:



Chem 343: Survey

Please answer the following questions so I can adapt Chem 343 to better suit your needs. Please turn this page in to Matt Bowman's mailbox in Chemistry 1146 by September 12.

What is your year? (Freshman, Grad Student, Returning Adult, etc…)

What is your major?

What do you hope to get out of this class? (Besides a good grade)

When is the ideal time for office hours (day and time)?

Do you learn a lot from textbooks?

What other classes are you currently enrolled in?