

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 1:

MWF 9:55-10:45 AM

Room: Chem 1361

Office Hours

Mondays and Wednesdays 12:15-1:15 PM Chem 1371

Mondays and Wednesdays 3:30-5:30 PM Computer Sciences 1207

(or by appointment)

Teaching Assistants

Michelle Fleetwood

fleetwood@wisc.edu

Brad Jones

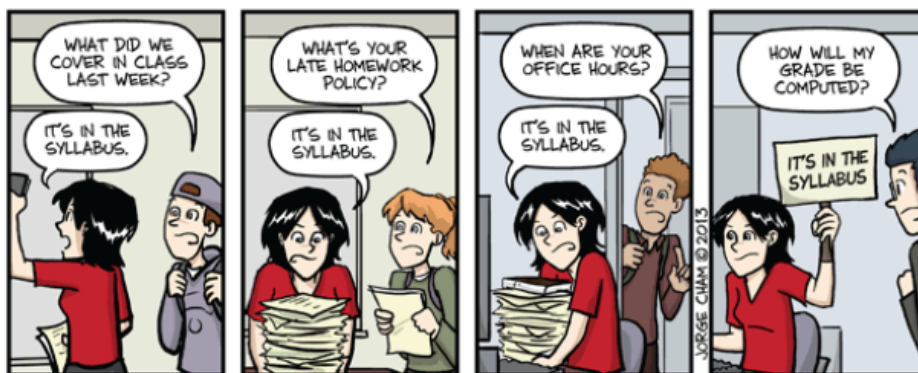
bjones@chem.wisc.edu

Bao Li

bli@chem.wisc.edu

Piled Higher and Deeper by Jorge Cham

www.phdcomics.com



IT'S IN THE SYLLABUS

This message brought to you by every instructor that ever lived.

WWW.PHDCOMICS.COM

title: "It's in the syllabus" - originally published 5/10/2013

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)

Matt's Schedule:

Matt Bowman this spring is lecturing for two courses Chem 343 and Chem 345. There are 220 students in 343 and 200 students in 345. Matt will try to keep everything straight, but will not remember necessarily which student is in which lecture. These lectures are back to back in the same lecture hall. Because he has to split his mind to deal with each class, he might not be completely there. There will be weeks in which there will be an exam happening for both classes. At which point, any vestiges of his sanity will disappear and there will be drool, *lots and lots of drool*. (His sanity is not being helped much right now as Matt Bowman is writing in the third person). Please state in any email correspondence with him whether you are in 343 or 345. The answer to your questions may differ significantly. Please be patient. If he does not respond within 12 hours, try again. Office hours for both Chem 343 and Chem 345 will be held simultaneously.

Textbook: *Organic Chemistry*, 6th 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.**

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. 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. **Forgetting that you changed an answer and submitting it for a regrade is still academic misconduct.**

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. **You must be above reproach.** 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 not all students will take the exam at the same time, it is theoretically possible for some students to receive advance knowledge of a quiz/exam. Students leaking test/quiz questions to other students that have not taken the exam is also regarded as academic misconduct and shall 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.

Exams:

There are four regular exams plus the final exam. Each regular exam will be worth 100 points. The regular exams will be Wednesday evening exams held from 7:15 to 8:45 pm in a lecture hall to be posted on learn@UW on a handout called Exam Information Sheet. Please check your schedules for potential conflicts. The dates are February 10, March 9, April 6, and April 20. Please notify me **ASAP by email** of any conflicts so alternative arrangements can be made. **Notifying me the week of an exam is NOT ADVISABLE as I will be cranky.**

You may not drop any exam.

The final exam is worth 200 points and cannot be dropped. It will take place on Wednesday, May 11 from **10:05 am to 12:05 pm**. 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 the summer. I'm afraid that is not listed as a valid reason.

Exams will be graded and returned at the next lecture. **PLEASE, PLEASE, PLEASE PICK THEM UP. LOOK AT THEM. MAKE SURE THE SCORES WERE ENTERED CORRECTLY AND THAT YOU UNDERSTAND WHAT YOU MISSED.**

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.** Oh, out of principle, I refuse any exam regrade requests that use the word "deserve."

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.

Any student that falls just below a cutoff will have their final exam automatically regraded.

Exam Penalties:

Though technically, the regular exams are worth 100 points apiece and the final exam is worth 200 points, it is possible to score a negative value on the exam. There are four exam penalties that you should be aware of and **AVOID** at all costs. **CONSIDER YOURSELF WARNED.**

Texas Carbon Penalty (TCP): If one of your answers has a carbon drawn that has five bonds to it, that is an affront to organic chemistry. Such a blasphemous creation will result in a five point penalty in addition to missing any points on that question.

Acid-Base Arrow Question (AB AQ): To describe what is happening in a reaction, chemists used the curved arrow notation. This shows the movement of electrons. The most important example of this is in acid-base reactions. I will show you the answer to this question along with examples of wrong answers. **THIS IS THE ONE OF THE MOST FUNDAMENTAL CONCEPTS IN ORGANIC CHEMISTRY.** It is used in 343, 345, 344, biochemistry, etc... If you cannot answer this question, then -5 points.

Name Penalty: The most important question on any exam is the one that has you fill in the following blank:

Name: _____

Yet, the number of people that do not do this are staggering. (8% of the exams last spring left this blank or missed it).

EIGHT PERCENT!!!!!!! There is no excuse for this. **THIS IS YOUR WARNING!**

- 1.) You will need to write your name (First and Last) on the name line appearing on the scoresheet and the page with problem one.
- 2.) You will need to circle your TA's name on the scoresheet.
- 3.) You will need to write the first two letters of your last name (legibly) in a box. (**NOT INITIALS**)

You must do all three of these to avoid the Name penalty. This penalty will be two points.

Time Penalty: Writing on the exam before the TA's say start or after time is called can be a five point penalty.

After that whole exam penalty rant, here is a photo of a tiger barb in time out.



Naughty fish.

Pop Quizzes:

Okay folks, discussions are important. They work best when people actually go to discussion. I know, it is a radical concept. To encourage you to continually study and attend discussion section, we will be having five pop quizzes. They will be each worth 10 points each and you can drop two of them. You can only take the quiz in the discussion section you are enrolled in. **There cannot be any exceptions as that gets way too complicated. If you miss a discussion section and there was a quiz that day, that is the dropped quiz.**

Some of you have scheduling conflicts with discussions. Some of you did this on purpose, some of you had sudden scheduling changes. Well, there is nothing I can do in either case. Five 10 point quizzes with two dropped quizzes adds up to 30 points. That is 5% of your grade. Not that much. **You will just have to make up the points by doing better on the exams.**

(And no there will not be a pop quiz on March 28).

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 301 Mondays | 2:25-3:15 | B351 | Bao Li |
| Section 302 Mondays | 2:25-3:15 | B357 | Michelle Fleetwood |
| Section 303 Mondays | 3:30-4:20 | 2311 | Brad Jones |
| Section 304 Mondays | 3:30-4:20 | B357 | Michelle Fleetwood |
| Section 305 Mondays | 3:30-4:20 | 2373 | Bao Li |
| Section 306 Mondays | 4:35-5:25 | 2311 | Michelle Fleetwood |
| Section 307 Mondays | 4:35-5:25 | B379 | Brad Jones |
| Section 308 Mondays | 4:35-5:25 | 2373 | Bao Li |
| Section 309 Mondays | 5:40-6:30 | 2311 | Michelle Fleetwood |
| Section 310 Mondays | 5:40-6:30 | 2307 | Brad Jones |

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. Remember, you are only really judged by your exams. Not your peers. Do not be afraid making mistakes. Better to make them in discussion than on an exam. 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.

Get to know your fellow students. Set up study sessions with them. Try problems from problem sets independently and then consult on the answers before looking at the answer key. Try teaching each other.

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. 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.

Add these numbers together:

946251.074373

9472580.499

JANUARY 2016

Chem 343

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY | SUNDAY |
|---|---|---|--|---|--|--------|
| | Page numbers are from Organic Chemistry 6th edition Marc Loudon | | | 1 | 2 | 3 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 Classes Begin | 20 Periodic Trends and Lewis Structures Pages 1-13 | 21 Tutorial: Nomenclature I Alkyl halides and alkanes | 22 Bonding/Molecular Interactions Pages 22-38 and 334-366 | 23 Tutorial: Nomenclature II Alkynes, Alkenes, Benzene | 24 |
| 25 Hybridization Pages 13-19, 35-40, 125-133, 681-684 | 26 Tutorial: Nomenclature III Functional Groups | 27 Resonance Functional Groups Pages 19-21, 95, 743-745, 750-757 | 28 | 29 Resonance Functional Groups | 30 Tutorial: Nomenclature IV Cycloalkanes and bicyclics | 31 |
| | | NOTES: | | | | |
| | | Lectures are from 9:55-10:45 44 days Discussions are on Mondays | | | | |

FEBRUARY 2016

Chem 343

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY | SUNDAY |
|---|---------|---|----------|---|----------|--------|
| 1 Alkanes Conformations Pages 45-78 | 2 | 3 Cyclic alkanes Pages 272-300 | 4 | 5 Bronsted-Lowry Acid/Base Chemistry Pages 96-121 and 698-701 | 6 | 7 |
| 8 Bronsted-Lowry Acid/Base Chemistry Pages 96-121 and 698-701 | 9 | 10 Review Exam I 7:15-8:45 PM | 11 | 12 Lewis Acid/Base Chemistry Pages 87-121 | 13 | 14 |
| 15 Stereoisomers Enantiomers Pages 229-271 | 16 | 17 Substitutions: SN1 Pages 382-428 | 18 | 19 Substitutions: SN2 Pages 382-428 | 20 | 21 |
| 22 Substitutions: SN1 vs. SN2 Energy Diagrams 382-428 | 23 | 24 Eliminations: E2 Pages 382-428 | 25 | 26 Eliminations: E1 Pages 382-428 | 27 | 28 |
| 29 Carbocation Rearrangements Pages 460-463 | | | | | | |
| | | NOTES: | | | | |

MARCH 2016

Chem 343

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY | SUNDAY |
|--|--------------------|--|--------------------|--|--------------------|--------|
| | 1 | 2 SN2 vs. E2 Ether Synthesis Pages 513, 917 | 3 | 4 Alkynes C-C Bond Forming Reaction Pages 698-704 | 5 | 6 |
| 7 Leaving Groups TsCl, PBr3, SOCl2 Pages 466, 470-471 | 8 | 9 Review Exam II 7:15 pm-8:45 pm | 10 | 11 Alkynes to Alkenes and alkanes Pages 695-697 | 12 | 13 |
| 14 Addition Reactions: HX and H2O to alkenes Pages 146-175 | 15 | 16 Oxymercuration demercuration Pages 190-193, 514 | 17 | 18 Hydroboration Pages 193-196 | 19 | 20 |
| 21 SPRING BREAK | 22 SPRING BREAK | 23 SPRING BREAK | 24 SPRING BREAK | 25 SPRING BREAK | 26 SPRING BREAK | 27 |
| 28 HBr to alkenes Pages 203-219 | 29 | 30 Dissolving Metal Mechanism/Alkyne hydration Pages 690-697 | 31 | | | |
| | | NOTES: Drop Date is March 18 After Exam II, the pace of the course accelerates. If you do not have 100 exam points at this time, please consider dropping. It is rare for students to pass the class without having 100 points between the first two exams. | | | | |

APRIL 2016

Chem 343

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY | SUNDAY |
|--|---------|--|----------|--|----------|--------|
| | | | | 1 Epoxides and Neighboring Groups Pages 518-528, 539-547 | 2 | 3 |
| 4 Cyclopropane Reactions Pages 433-437 | 5 | 6 Review Exam III 7:15 pm-8:45 pm | 7 | 8 Halogenation of alkenes Pages 181-185, 308-311 | 9 | 10 |
| 11 Grignards, Organolithiums, Cuprates Pages 429-431, 529-531 | 12 | 13 Osmium Tetroxide Periodic acid Pages 532-536 | 14 | 15 Ozonolysis Pages 198-202 | 16 | 17 |
| 18 Alcohol Oxidation Hydrate formation Pages 476-485, 963- 966 | 19 | 20 Review Exam IV 7:15 pm-8:45 pm | 21 | 22 Radical Halogenation Pages 437-441 | 23 | 24 |
| 25 Conjugated Systems Pages 712-731 | 26 | 27 Conjugated Systems Pages 712-731, 741-749 | 28 | 29 Diels-Alder Pages 732-741 | 30 | |
| | | NOTES: | | | | |

MAY 2016

Chem 343

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY | SUNDAY |
|-----------------------------------|---------|---|----------|--|----------|--------|
| | | | | | | 1 |
| 2 Diels-Alder Pages 732-741 | 3 | 4 Aromaticity Pages 758-778 | 5 | 6 Review Last Day Email topics to Matt | 7 | 8 |
| 9 | 10 | 11 Chem 343 Final Exam 10:05-12:05 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | NOTES: Final Exams will be graded on May 11. The scores will be posted late on May 12. Grades will be posted on May 13. | | | | |

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 January 31. The mailbox is in the section with the green labels.

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?

Have you found electronic homework to be helpful in your other classes?