CHEM 345: Intermediate Organic Chemistry

Contact Information
Matt (Doc) Bowman
262-2519
Chemistry 5232
bowman@chem.wisc.edu

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

Lecture 5:
MWF 11:00-11:50 AM
Room: Chemistry 1361

Office Hours
Mondays and Wednesdays 2:00-4:30 PM Chamberlin 2135
Tuesdays 9:30-11:30 AM Chemistry 1371
(or by appointment)

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
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. Since 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.

Piazza will also be used in the course. The signup for piazza:
piazza.com/wisc/spring2017/chem345_005_sp17

Teaching Assistants and their Office Hours

Brad Jones        bjones@chem.wisc.edu
Wednesdays 8:50-9:40, 9:55-10:45

Lu Liu           lliu245@wisc.edu
Mondays 3:30-4:20, 4:35-5:25

TA office hours are held in Chemistry B317 (Organic TA Office)
There is a schedule for various TA office hours posted outside Chem B317. The TA’s on the schedule are organic chemists and can answer your questions. They do not have to be assigned to our lecture section. I cover topics in a different order than the other instructors and as such it may take the TA a little bit of time to answer a question. (If someone asks me a question regarding general chemistry, I have to think quite a bit to figure out the correct answer. Though the deer in the headlight look in my eye usually is enough to convince them to find a gen chem TA).
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 we will cover a majority of the material from Chapters 12-13, 16-27, and some reactions and concepts outside the book. 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 may expect you to have this textbook for that lab course as well. 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.

**Video lectures**

Kaltura 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. A page with links to these videos will be provided.

**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/quiz 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.
Grading (As transparent as I can be)
The grade will be based on exams and quizzes. The maximum number of points possible will be 630 points. (There will be more than that available).

**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%. 89.4999999999999999999999999999999999999999999999999999999999999% is considered to be 89%. That is just how it is. Don’t blame me, blame math.
The actual lines are determined by a mixture of factors: final distribution, the historical grade history of all of the sections of Chem 345, 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. To minimize confusion about curves and AB’s and BC’s: The AB range and BC range is very 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 at least 55% of the class will receive at least a BC. The DF line will not move and the C line will never dip below 50%.

The Final Cutoffs will not be released. There will always be someone with the highest AB, highest B, and so on. That is the way of the world. It is conceivable that someone will miss a cutoff by one point. We will try to choose the cutoffs so that does not happen. The final exams that end up right below a cutoff will automatically be regraded. There will be only six points of extra credit offered, details are later in the syllabus.
**Mental Health Resources:**

Now is as good as time as any to talk about mental health. I realize you are under a lot of pressure. Some of that pressure is internal and some of that is external. Regardless of the source of the pressure, the pressure is very real. Students have a tendency to equate grades with future happiness. It is an understandable connection, but not really a true one. I have quite a few C’s on my undergraduate transcript (a few in chemistry) and I still ended up with my dream job. I have had a student that received an F in organic chemistry and had to retake the class. She is now in medical school. So, a low grade is not the end of the world.

If disaster happens or at anytime you feel that you cannot cope with something, or just need to vent, there are resources available on campus for you. Take advantage of them.

**University Health Services (UHS):**
Offers group, individual, couple/partner therapy stress management, and disordered eating assessments and treatment at no cost. It also provides massage therapy, yoga, and other wellness services.
Student Activity Center 7th floor  608-265-5600
[www.uhs.wisc.edu/mentalhealth/getting-started](http://www.uhs.wisc.edu/mentalhealth/getting-started)

**Ask.Listen.Save:**
*Ask.Listen.Save. is a student org that aims to prevent suicide by reducing the stigma of mental illness. Through educating the student body, they aim to increase the awareness and create a safe environment in which students know they are not alone and can feel free to ask for help.*
Student Activity Center Suite 3196 [www.Asklistensave.org](http://www.Asklistensave.org)

**Badgerspill:**
BadgerSpill is a peer-to-peer support network of and for UW-Madison students. You can write in online to “spill” or vent privately about whatever you are going through and get unbiased feedback, empathy, and resources from other students who have dealt with similar situations. Both parties are anonymous to one another and the spiller gets multiple responses within 24 hours.
[www.badgerspill.com](http://www.badgerspill.com)

Please look on the learn@uw page for the mental health resource sheet for more resources.
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 posted on learn@UW on a handout called Exam Information Sheet. Please check your schedules for potential conflicts. The dates are February 6, February 27, April 3, and April 24. 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. If you have a Monday evening lab, you have a conflict.

The final exam is worth 200 points. The final exam will be on Saturday, May 6 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 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. If you pick them up within one week, you will get one point extra credit.

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 HARSPLY. 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 (ABAQ):** 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 write the first two letters of your last name
(legibly) in a box. (NOT INITIALS)
You must do both of these to avoid the Name penalty. This penalty will
be two points.

**If you email me your lecture number with the “rhinoceros” in
the subject line by Monday, Jan 23 you will receive 2 bonus
points. By Monday, Jan 30, it will only be one bonus point.
After Jan. 30, no points will be awarded.**

**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 bunny.

Drawing carbons with 5 bonds are trademark acts of monsters and bunny-haters.

**Extra credit opportunity:** You will receive one point for picking up your midterm within one week of taking it. You can pick up your exam during Matt’s office hours or during the lecture following the exam. That is 4 points total.
**Weekly mini-quizzes:**

To encourage everyone to keep up with the material and attend discussion sections, we will have short (~10 min) quizzes in discussion each worth 5 points. These quizzes will be held each week, except on the Fridays before exams, Jan. 20, and March 17. That is eight total quizzes and the two lowest quiz scores will be dropped giving a total of 30 quiz points possible. You can only take the quiz in the discussion section you are registered. If you miss a discussion quiz, then that is one of your dropped quizzes. **There will be no makeup quizzes.**

**Sapling:**

For those that like to use sapling electronic homework, it will be available to you. It is not required and there will not be any points associated with it.

**The importance of organic chemistry:**

Most of you after this semester will not use organic chemistry again. A few will use it in biochemistry, and a very few will go on to advanced organic chemistry (547: which is an excellent course). But most of you, will not use it that much again, so why go through with it. Well, because organic chemistry is unlike anything you have encountered up to this point. It has its own written and verbal communication, its own logic processes, its own visualization, and its own headaches. Essentially, it has a bit of every subject you have taken as a kid, but weirdly warped and twisted. Your brains are different now then you were a kid. It is not as easy to memorize or recall information. Therefore, you have to learn about yourself and how to learn all over again. We will provide as many resources as we can. It is up to you to find out what works for you and apply it. This self-knowledge will help you in your future courses even if it has nothing to do with benzene.
Study tips

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.

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. **You may feel pressure after an organic exam to stop studying ochem and focus on other classes. I suggest you resist this urge, as once you fall behind it is very difficult to catch up.**

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 by talking to classmates in discussion, 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 except for the two sections held in the Noland Zoology building.

Section 471 Fridays 12:05-12:55 B379 Lu Liu
Section 472 Fridays 1:20-2:10 2377 Brad Jones
Section 473 Fridays 2:25-3:15 2307 Brad Jones
Section 474 Fridays 3:30-4:20 2307 Brad Jones
Section 475 Fridays 1:20-2:10 B383 Lu Liu
Section 476 Fridays 2:25-3:15 B357 Lu Liu
Section 477 Fridays 3:30-4:20 2373 Lu Liu
Section 478 Fridays 4:35-5:25 2373 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 345.

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 345 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.  
**I am transitioning to a new electronic system (Canvas), so the above password may no longer work. There will be another way of accessing the system though. I will email out the method as soon as I find out. It will likely involve an Ouija board and a bucket of Kentucky fried chicken.**
Leter of Recumdenation Policee:

I try to teech about ~ 802.5 undergraduate each year. Unfortunately I wont be able to get to know all of you. That makes righting detailed rec letters nearly impossible. Rec letters from me will include grade and class rank and my impresion of you. I can rite them but I highly suggest that u git a rec from a prof in a small, higher level curse or bitter yet a prof that u work four in a research groop. They are more likely to give a better and more full depiction of you and will likely use spell check.

The photo of the lionfish (a poisonous invasive species that is set to decimate the population of the Atlantic coast) has nothing to do with the letter of recommendation policy above. There was just blank space that needed to be filled. When there is space that needs to be filled, I just fill it with whatever random thing that pops into my mind. So, it is best that there is not space that needs to be filled. I’m fairly certain that I did not include the spawning habits of the lionfish in the last recommendation letter.
<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td>29</td>
<td>30</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Page numbers are from *Organic Chemistry 6th edition* Marc Loudon

- **1-7**: Classes Begin
- **8-14**: NMR Chemical Shift and Integration and Splitting/Coupling
- **22-24**: NMR Chemical Shift and Integration and Splitting/Coupling
- **25**: Grignards and Sodium Borohydride (pg 970-977)
- **26**: Cyanohyrdrin and Hydrate Formation (pg 963-969)
- **29-30**: Acetal/Hemiacetal formation (pg 978-983)

**NOTES:**
- Lecture 5 is from 11:00 to 11:50 MWF Chem 1361
- Discussions are on Fridays
<table>
<thead>
<tr>
<th>SUNDAY</th>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
<th>SATURDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 Imines/Reductive Amination pg 984-986, 1199-1201</td>
<td>2</td>
<td>3 Imines/Reductive Amination pg 984-986, 1199-1201</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>6 Exam I Review</td>
<td>Exam I 7:15-8:45</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>Wittig Reaction pg. 990-994</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>10</td>
<td>Irreversible Rxns: Carbanions and Hydrides pg 1079-1083, 1086</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>13</td>
<td>Acyl transfer/ RCO2H derivatives pg 1004-1024, 1060-1064</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>15</td>
<td>Acid chlorides anhydrides pg 1024-1027, 1067-1075</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>17</td>
<td>Amides pg 1048-1049,1053, 1064-1065, 1378-1383, 1425-1426</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>20</td>
<td>Amide Coupling Peptide Synthesis pg. 1391-1399</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>22</td>
<td>Nitrile Chemistry and Strecker Synthesis pg 1065-1067, 1388-1389</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>24</td>
<td>Rearrangements: Baeyer-Villiger Beckmann</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>27</td>
<td>Exam II Review Exam II 7:15-8:45</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTES:
### MARCH 2017  
**Chem 345**

<table>
<thead>
<tr>
<th>SUNDAY</th>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
<th>SATURDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8 EAS: Sulfonation and Nitration pg 803-804, 822-825</td>
<td>9</td>
<td>10</td>
<td>Sandmeyer Reaction pg 1206-1209</td>
</tr>
<tr>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15 Nucleophilic Aromatic Substitution pg 885-887, 1342-1345</td>
<td>16</td>
<td>17</td>
<td>Specialized Bromination pg 841-845, 1113-1118 Drop Date</td>
</tr>
<tr>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22 SPRING BREAK</td>
<td>23</td>
<td>24</td>
<td>SPRING BREAK</td>
</tr>
<tr>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29 Advanced Organometallics Suzuki, Heck Pg 891-906</td>
<td>30</td>
<td>31</td>
<td>13C NMR and IR pg 569-590</td>
</tr>
</tbody>
</table>

**NOTES:**
Drop Date is March 17
If you do not have 90 points by March 17, it is very unlikely you will earn a C in Chem 345.
<table>
<thead>
<tr>
<th></th>
<th>SUNDAY</th>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
<th>SATURDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Exam III Review</td>
<td>Exam III 7:15-8:45</td>
<td></td>
<td>Tautomerization and Aldol Reaction pg 1103-1113, 1119-1130, 1152-1153</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Claisen pg 1133-1152, 1030-1032</td>
<td></td>
<td>Conjugate addition, Michael Rxn, Robinson pg 1156-1166</td>
<td></td>
<td>Mannich Not in book (Aldol with an imine electrophile)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>1</td>
</tr>
<tr>
<td>24</td>
<td>Exam IV Review</td>
<td>Exam IV 7:15-8:45</td>
<td></td>
<td>Pericyclic Reactions pg 1449-1458</td>
<td></td>
<td>Pericyclic Reactions Cycloadditions Diels Alder pg 1463-1467</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTES:  

Exam IV Review Exam IV 7:15-8:45
<table>
<thead>
<tr>
<th>SUNDAY</th>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
<th>SATURDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Pericyclic Reactions</td>
<td>Pericyclic Reactions</td>
<td>Last Class Day</td>
<td>No Classes</td>
<td>Chem 345 Final Exam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electroyclic Reactions</td>
<td>Sigmatropic Rearrangements</td>
<td></td>
<td></td>
<td>7:45 AM-9:45AM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pg 1458-1462</td>
<td>pg 1467-1479</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
Add these numbers together:

946251.074373
0.44
6838524
**Chem 345: Survey**

Please answer the following questions so I can adapt Chem 345 to better suit your needs. Please turn this page in to Matt Bowman's mailbox in Chemistry 1146 by January 24.

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?

Who was your 343 instructor?

What other classes are you currently enrolled in?

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

Do you have a tophat subscription for this semester?