

Instructor: Dr. Brian J. Esselman

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Office hours: Monday 2:00 - 3:30 PM, and Wednesday 2:00 - 3:30 PM My office hours are combined CHEM 343/344/345.

Note: Piazza is an online resource being used this semester to answer content questions in as efficient a manner as possible. Please feel free to utilize this resource in addition to going to office hours.

Philosophy

To quote one of my best teachers, "All real learnin' is painful." He was a football coach which might have shaped his outlook on teaching and learning chemistry. Over the years, however, I have found a lot of truth in his statement. In challenging learning environments or courses that have high expectations, mastery of the material has required a lot of effort, a lot of toil, a lot of time and a fair amount of pain. Learning is not free and sadly is not available Matrix-style. To move from familiarity to understanding and mastery, in organic chemistry, is going to require a great deal of focus and effort. I promise that by the end of chemistry 343/344/345, you will be a more mature learner, a stronger thinker, and have a much better understanding of chemistry.

Where the Learnin' Happens: Each phase of learning below is important for your success. Do not overlook any of them.

Lecture

The purpose of lecture is to provide a conceptual framework for you to understand the course material. Key concepts and examples will be highlighted. While many details will be discussed, the focus will be on the big concepts and how the current material connects to past learning and future expectations. Lectures will help define the depth and breadth of the course and will help you understand the course expectations. I will try to always be available in the lecture hall before and after lecture for questions. I cannot cover all of the course material at a sufficient depth in lecture alone. You will need to supplement lecture with study groups, discussion attendance, and textbook reading.

Lecture videos will be made and posted on Learn@UW in as timely a manner as possible. These are recorded with high definition video and audio and capture exactly what I'm presenting in lecture. There is no guarantee that these will be available for all lectures and as quickly as you'd like. Attending lecture is still advised. We are currently working with the new UW streaming service Kaltura to make the full quality files available streaming. There may be some kinks to work out early on. Please be patient.

Discussion

The discussion sections with your TA are critical as part of your learning process. The discussions play many roles all of which serve to deepen your understanding of the course material. You will have a chance to talk to your TA about problem solving strategies, difficult course concepts, and address common misconceptions. Discussion provides a great opportunity to talk about the material. You will learn a lot more if you are engaged in conversations about course content than if your only studying is hiding in cage in depths of the Memorial Library Stacks. Furthermore, your TA's are highly successful organic chemists. This means that they can point out common issues that students struggle with and help you avoid them. They can provide you with learning insights that worked for them and they can help you interpret the textbook and lecture materials in a fairly sophisticated manner. Get the most out of it by showing up, ready to discuss the week's material.

Textbook Reading

It is quite difficult for most students to understand the course material at the depth needed for a high-level of success without reading the textbook. Loudon's organic textbook is a great book chosen for its clear explanation and great practice problems. I recommend reading each chapter before lecture or immediately following. A thorough reading of the textbook on any topic you are struggling with is critical. The explanations and examples provided will be helpful to your mastery of the material. It will provide more depth and breadth to the course material than I can provide in lecture and should not be over-looked as a valuable tool. I highly recommend working the in-text problems as you go.

Office Hours

Your TAs and I are highly concerned about your learning. Unfortunately, there are 250+ of you and we can't reach out to each of you individually and make sure that you are having the success that you are looking for. That's where the office hours come in. In the past, the most successful students took good advantage of office hours on a weekly basis. They came with lists of questions and clearly identified problems that they needed help solving. This led to great discussions and a very effective use of time.

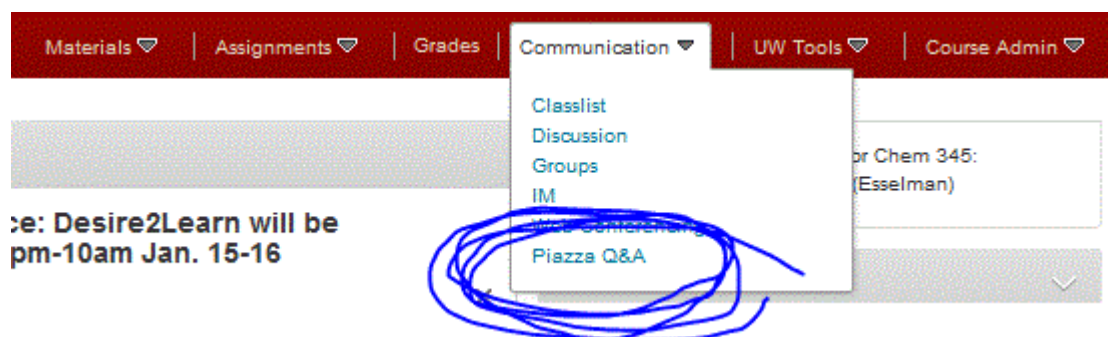
Your TAs will be holding office hours and you are highly encouraged to attend and get some one-on-one and small group help with the problem sets and previous exams. Additionally, the Organic Chem TA office that will be staffed most of the day with TAs of Chem 341/342/343/344/345/346 ready to answer your questions. Feel free to go as often as you like.

Email

I get a lot of emails, and I lose them in my inbox more than I'd like. In order to help bring your email to my attention, please include Chem 343/344/345 in the subject line of all emails you send me. Email should be limited to logistical, concerns about grades, requests for alternate office hours, or any non-content related course questions. This semester, we are using Piazza (see below) to manage content-related questions. This is great for you as it allows you to get your science-related questions answered by another student, any of 3 TAs and/or myself. This helps to ensure that you'll get a timely response to your question.

Piazza

Content questions should be directed to Piazza and not sent via email to either the TAs or myself. Content questions received via email will be directed to Piazza. Piazza is a great online resource where you can post questions, post answers to other students' questions, and receive answers to your questions from the TAs and myself. Please remember to be very clear when wording your questions on Piazza. Pictures of structures from ChemDraw are very helpful. Chemdraw is an expensive piece of chemistry software that you have free access. It is a high-quality chemistry drawing program that you can download (see below) and it will allow you to draw structures to accompany your questions. Pictures or scanned images are also okay on Piazza, but you will likely find Chemdraw easy to use to make high-quality organic chemistry drawings. Piazza can be accessed from within Learn@UW by the link shown below.



Chemdraw

To download Chemdraw please follow these instructions: <http://comphelp.chem.wisc.edu/content/downloading-chemdraw-14>

Problem Sets, Textbook practice problems, Previous Exams

The only way to make sure you are learning at the right depth and pace is to complete the practice problems available. If you cannot transfer what you know to new molecules or new structures, it identifies a gap in your knowledge and understanding. Answer keys are provided to the problem sets and textbook, use these to check your learning. Answer keys are intentionally not provided to some of the previous quizzes/exams. This is done to encourage you to talk to your classmates and instructors about any answers that you are unsure of and to work through problems that you can't simply look up the answer to and shortcut the thinking/learning process.

Classmates

Nothing reveals your misconceptions and misunderstandings regarding organic chemistry than trying to explain something in words. If you are working with one or more classmates on a regular basis, both of you will benefit from the opportunity to talk about organic chemistry. Helping others through material is a great way to take your own learning of a concept from superficial to mastery.

Additionally, there are plenty of other resources from the UW-PLA, free tutoring options, and paid tutoring options. Most importantly, find a way to master the material and have success.

Chemistry 343 Grading*

There are 600 points available in this course. There are four 25 pt quizzes, three 100 pt exams, and one 200 point final. No points will be awarded for the problem sets or attending class. No exams or quizzes will be dropped; you must take them all at the regularly scheduled time unless you have a university course conflict. All points have equal value. The final letter grades based upon 600 course points will reflect the historic averages of Chem 343 with a course GPA near 2.74.

25 pts. Quiz 1 Discussion

100 pts. Exam 1

25 pts. Quiz 2 Discussion

100 pts. Exam 2

25 pts. Quiz 3 Discussion

100 pts. Exam 3

25 pts. Quiz 4 Discussion

200 pts. Final Exam

There are NO makeup quizzes. You must attend discussion on the dates of the quizzes.

Grading Philosophy

Grades are important to you, to me, and to the university and grade assignments must reflect achievement and learning. How that is measured and what achievement looks like are issues that are up for debate and are subject-dependent. I consider the exams and quizzes in this course to be reasonable markers of achievement and learning. Certainly, there are better/alternate methods for assessing student learning, though none of which seem overly practical in a course that serves 200 - 350 students per term. The final exam counts for 200 of 600 course points weighting it double the other exams or the quiz total. This favors students who have improved in their understanding and preparation as the course progresses. I endeavor to write exams that challenge students at all levels of learning and provide a wide grade distribution. My goal is to have no one be perfect on the entire exam, at least one student provide a perfect answer to each question, and everyone demonstrate the learning that they have achieved. I will always try to separate those that are trying to memorize patterns or use mnemonic devices from those who understand the content in terms of reactivity, structures, molecular orbitals, pKa's, etc.

Every semester, I get a lot of emails about grades, many of them suggesting that a better grade is desired than was assigned. Often these emails include a significant misconception, in my mind, about how grading is supposed to work. Grading in my lecture of Chem 343/345 is not about any of the following and are not considered as rationale for wanting/deserving a better grade than what you have earned:

- 1) Effort/Hard work
- 2) Attitude toward organic chemistry

- 3) Attendance of office hours, lecture, or discussion
- 4) How much your TA or I like/dislike you
- 5) Needing a better grade for {insert school type here} school admissions
- 6) Wanting to take a course for which Chem 343/345 are prerequisites

Unfortunately, instructors and students have helped create a general state of confusion about how grades are assigned, generally. Setting a certain % grade for an A/B/C is entirely artificial and is based upon a few assumptions. Firstly, it assumes that all assignments are of equal difficulty and can be compared directly. This is certainly not the case in this course as the mean and standard deviation vary significantly from assignment to assignment. Secondly, it assumes that there is some universal standard (such as 80 % = B) that should be attained for a particular grade. Furthermore, without intervention it often creates grade distributions in difficult classes with GPA's that are much lower than desired or reasonable. This forces odd adjustments to be made to scores to make them *fit* with the instructor's desired grade distribution. This seems artificial and doesn't help students gauge their performance in light of mysterious adjustments. (Often times, people misuse the word *curve* here to mean a positive adjustment in everyone's score.)

A much simpler approach is to allow the scores to fall where they do from assessment to assessment and to determine each grade relative to the mean in units of standard deviation. This is an imperfect approach, but far more instructive than simply looking at raw scores or % scores without considering the mean and standard deviation. In order to do this, simply use the formula below and apply an actual (simple) curve.

normalized score = (your score - average score)/(standard deviation)

If your score is +1, you rocked that assessment! If your score is near zero, you have achieved an average grade on that assignment (~ BC in Chem 343/345). If you have a score of -1, your achievement is not where it needs to be. This information will be added to the title of each quiz or exam once the information is available.

Folks, please don't cheat. Cheating is bad; cheating is sad.

Dealing with academic misconduct is the most painful/sad/annoying part of my job. Historically in Chem 343/345, penalties have ranged from a zero on the related-work and a letter on file with the Dean of Students office to failure/removal from the course with larger UW Dean's office penalties. The TAs and I had to deal with two cases of academic misconduct last year and it was pretty unpleasant and heartbreaking all around. Out of respect, for yourselves, each other, and your instructors please behave in an appropriate manner with regards to all of the assessments.

[UW Dean of Students Office - Academic Integrity](#)

From my experience, the two most common forms of academic misconduct in this course are related to re-grades and sharing information about quizzes/exams. Here are some general thoughts and suggestions on the topic... (no particular organization or forethought)

- 1) Do not talk to people about the quiz if they haven't taken the quiz.

- 2) Do not turn in work or thoughts that aren't your own.
- 3) Looking at someone else's exam or notes you brought in or whatever is bad, very bad.
- 4) If it feels like you might be doing something icky and dishonest; you may well be, try doing something else instead.
- 5) Do not change your answers on your exam and ask for a re-grade. You might think I'm stupid and I might be... but I'm not that stupid.
- 6) When you come to the exam or quiz, sit far enough away from anyone else and in a posture that no proctor can think you are cheating. Make sure all of your stuff is in airplane mode, like your phones, computers, purses, backpacks, etc... If all your stuff is put away, shut down, zipped up, and not connected to the internet, so no one can think you're trying to cheat.
- 7) In the words of one of your classmates from a previous semester about sharing exam related information, "It wouldn't be moral and since this class is curved, revealing knowledge of the exam wouldn't be beneficial to my grade either."
- 8) Cheating to gain a few points is not worth the possible repercussions. I'm sure of it. I've checked.

Required:

Organic Chemistry 5th edition by Marc Loudon

Recommended:

Solution Manual Organic Chemistry 5th edition

(Additional solutions not in the Solution Manual are posted on Learn@UW)

Molecular Model Kit

Several model kits are available online, at the UW Bookstore, and from AXΣ in the Mills Street Atrium of the Chemistry Building. It is not important which model kit you acquire, none of them are perfect and all are helpful. (I like one of the more expensive one simply for the nice snap/pop sound it makes when in use.)

ChemDraw ([ChemDraw 14 Download Instructions](#))

As a UW student, you get ChemDraw free! This is pretty awesome! I highly recommend downloading the software and using it whenever you are sending an email question to a classmate, myself, or a TA. It is the same software that we use to draw all of the molecules for your problem sets, quizzes, and exams.

Course Schedule – Chemistry 343 Summer 2015

Monday	Tuesday	Wednesday	Thursday	Discussion 1	Discussion 2
June 15 Chapter 1 Bonding and Structure	June 16 Chapter 1/Chapter 2 Bonding and Structure / Alkanes	June 17 Chapter 2 Alkanes	June 18 Chapter 2 / 3 Alkanes / Acids and Bases	Tuesday Problem Set 1 Problem Set 2	Thursday Problem Set 2 Problem Set 3 Quiz 1
June 22 Chapter 3 Acids and Bases	June 23 Chapter 3 / 4 Acids and Bases / Alkenes	June 24 Chapter 4 Alkenes	June 25 Chapter 4 Alkenes	Problem Set 3	Problem Set 4 & Exam Review 1
June 29 Exam 1 Chapters 1 – 4	June 30 Chapter 5 Addition Reactions of Alkenes	July 1 Chapter 5 Addition Reactions of Alkenes	July 2 Chapter 6 Principles of Stereochemistry	Problem Set 5	Problem Set 6
July 6 Chapter 6 Principles of Stereochemistry	July 7 Chapter 7 Cyclic Compounds and Stereochemistry of Reactions	July 8 Chapter 7 Cyclic Compounds and Stereochemistry of Reactions	July 9 Chapter 8 Alkyl Halides, Alcohols, Ethers, Thiols, and Sulfides	Problem Set 7 Quiz 2	Problem Set 8 & Exam Review 2
July 13 Chapter 8 Alkyl Halides, Alcohols, Ethers, Thiols, and Sulfides	July 14 Exam 2 Chapters 5 – 8	July 15 Chapter 9 Chemistry of Alkyl Halides	July 16 Chapter 9 Chemistry of Alkyl Halides	No discussion	Problem Set 9

July 20
Chapter 9 / 10
Chemistry of Alkyl
Halides / Chemistry of
Alcohols and Thiols

July 21
Chapter 10
Chemistry of Alcohols
and Thiols

July 22
Chapter 10 / 11
Chemistry of Alcohols
and Thiols /
Chemistry of Ethers,
Epoxides, Glycols, and
Sulfides

July 23
Chapter 11
Chemistry of Ethers,
Epoxides, Glycols, and
Sulfides

Problem Set 9
Problem Set 10
Quiz 3

Problem Set 11

July 27
Chapter 11 / 14
Chemistry of Ethers,
Epoxides, Glycols, and
Sulfides / Chemistry
of Alkynes

July 29
Chapter 14
Chemistry of Alkynes

July 30
Chapter 14
Chemistry of Alkynes

July 31
Exam 3
Chapters 9 – 14

Problem Set 11
Problem Set 14 &
Exam Review 3

No discussion

Aug 3
Chapter 15
Dienes, Resonance,
and Aromaticity

Aug 4
Chapter 15
Dienes, Resonance,
and Aromaticity

Aug 5
Chapter 15 / Review
Dienes, Resonance,
and Aromaticity

Aug 6
Final Exam
Chapters 1 – 15

Problem Set 15 &
Final Exam Review
Quiz 4

No discussion

Course schedule is subject to change. 😊