

ORGANIZATIONAL BLURB FOR CHEMISTRY 0228

Problem-Solving Organic Chemistry, Spring, 2017

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MJ Office Hours by appointment

General Course Description: For the first week, this course will operate in the traditional lecture format. We will use that week not only to cover some material, but also to organize the small groups that will spend the rest of the semester working problems. There will be some other lectures throughout the semester, but the bulk of the time will be spent working those problems. We will help construct the groups, but you may “self-assemble” by selecting *one* working partner. Note, however, that your designated partner also has to select you, and **both** of you must email MJ!

Our goal is not to transmit facts to you. Facts will inevitably be forgotten, and have an uncomfortable way of changing with time. Instead we will focus on learning how to “think organic chemistry,” on how to become a good problem solver.

The first semester of this course covered structure, bonding, spectroscopy, and the fundamental building block reactions of organic chemistry: substitution, elimination, and addition reactions. In this semester will cover approximately 11 chapters, 13 -20, 23 and 24. There is a detailed schedule posted, but keep in mind that the details are certain to change as we go along.

This course demands a lot of both you and us. Our aim is to teach the best course in organic chemistry anywhere. Although we may – or may not – fall short of this goal, it will not be for lack of effort. In turn, this version of the organic course demands a lot of you. For you to succeed in this course, for you to learn how to be that problem solver and for you to do well, you must participate actively in the problem-solving sessions. You cannot sit passively and absorb information. You must – must – be willing to put your ideas out for discussion – and some of those ideas will inevitably be wrong. That’s how real science gets done – necessarily imperfect ideas are discussed, argued over, and refined to better approximations. After all too many years of experimenting at Princeton, NYU, and elsewhere, I am convinced that the small-group method works, and is far superior to the traditional talking-head lecture method. But this method is not for everyone; you must participate. But most of you know that by now.

You must always go to class and you must keep up with the reading. Think carefully – are you willing to do those things? If you are, this course will work. If not, it will not. The sentence in boldface above is not boilerplate! Attendance at the problem sessions is essentially mandatory. We won't officially penalize you, but there is a very strong inverse correlation between the number of missed sessions and grades. *Very* strong. Missing a problem session costs, statistically, about 3 points on your final average! We don't officially take those points off, we don't have to - nature does it!

Details of the Format: We will begin the first week with traditional lectures, but this delay is only to allow us time to form the groups. The class will be divided into groups of four and these groups will work a set of problems together each day. Finished problems and answers will be posted on the course Classes site as they are done. We will cruise the room, helping to keep you on track, responding to questions, and making suggestions for different approaches and/or extensions.

Texts: The texts will be “Organic Chemistry, Fifth Edition,” Maitland Jones, Jr., and Steven A. Fleming, W.W. Norton, New York, and the Study Guide, also published by Norton, by Jones, H.L. Gingrich, and Fleming. The Study Guide has elaborate answers to all the problems in the book, and is utterly essential. The text and lectures/problem sessions are separate parts of the course. There will be material covered at length in the book that we do not touch on in lecture, and vice versa. The Classes site will have general chapter and page listings, but these are meant to be neither inclusive nor exclusive. You are expected to forage widely in your readings, using the index as well as other texts. We can recommend Marc Loudon's fine book, “Organic Chemistry, Fourth Edition,” Oxford as a book that can be profitably consulted for another view on things.

NYU Classes: Blackboard has been replaced by Classes and the first Classes by a new version. Here you will find suggested problems for each chapter, old and current exams and answers, readings, assorted handouts and announcements, and, sometimes, Opportunities for additional Hour Test points. Check it often.

Problem Sets: The Classes site has suggested problems for every chapter. Unfortunately, we do not have the manpower to grade these, so they are not required. However, you will find that doing problems is vital in preparing for exams. You are urged in the strongest terms to do those problems and to do them without the aid of the Study Guide. The effectiveness of working problems drops precipitously if you do not do them first without the Study Guide. There will probably be too many problems in the book for you to do them all, especially as the semester proceeds and demands on your time increase. One obvious solution is to do only some of the problems. That technique seems easy, but many people are intimidated by this simple idea and just abandon the problems until panic time. There is nothing wrong with doing every other problem! The best way to do the problems is to do them with your Group, with each member of the group having the task of doing one or two problems and then explaining it to the group. If you adopt this method, you will find that the “explaining” part is an extraordinarily effective way to learn.

The problem sets, especially the later ones, do not contain “drill” problems. Such exercises are common in the book, however. It is very important that you be in control of the basic parts of the course before you attempt the “think” problems on the problem sets of in the exams.

Exams:

Dates provided by the Deans. Please note that we do not pick these (poor) dates. They are inflicted on us (and you). The first exam comes too soon, and the second too late, making the third too soon as well.

Exam 1 Friday, February 17, 2:00-4:00, place TBA

Exam 2 Friday, March 24, 2:00-4:00, place TBA

Exam 3 Friday, April 28, 2:00-4:00, place TBA

Final: May, Time/place TBA

On the exams, resist the temptation to over-analyze. Thinking “simple” is usually the right thing to do. As Ted Williams once said, “If you don’t think too good, don’t think too much.”

Please note that all exams are cumulative. Recent material may be emphasized, but you are responsible for all the material covered so far.

Quizzes: There will be roughly one quiz a week. The best 8 of 10 will count. See Schedule.

Grades, Grading Schemes, Psychopathology, and Competition: At almost every school, the course in organic chemistry has the reputation of being very hard and, often, destructively competitive. Moreover, it is widely held that success in “orgo” is essential to gaining entrance to The Medical School Of Your Choice. We can do nothing about the last notion, as it is utterly external to our efforts here. **Most Important:** In this course, you are not in competition with your neighbor. What he or she gets has NO-repeat: NO - bearing on your grade. There is NO curve, which simply means two things: 1. There is no pre-set number or percentage of A’s, B’s and so on. There can be a year in which everyone gets an A. 2. Exams will not be scaled to some pre-set number. We aim for a median of about 65 on all exams. Historically, 65 has been *roughly* the B – B minus divide. Historically, about 60-65% of the students get A’s and B’s (so, the course is not that hard). There are two methods of calculating your score. You will get the better of the two possibilities. 1. We drop the lowest score on the uncurved three in-term exams. The average of the remaining two counts 60%. The Final counts 30%, and the quiz grade counts 10%. 2. We count all three exam grades. The exam average counts 65%. The Final counts 25%, and the quiz grade counts 10%. Regardless of the option you use, your overall grade is made up of 75% course grade and 25% lab grade.

IMPORTANT: You must pass both parts of the course. An F or D in the lab will not be rescued by a higher grade in the course part, and *vice versa*.

I am going to supply some rough historical grade cutoffs. If this information generates too much wear and tear through complaining, it will not be repeated. Please read the following information carefully. **WATCH OUT!** These numbers refer to the *course* part of the grade – this year the lab will be factored into the overall grade.

ROUGH historical grade cutoffs: Nota bene: There is a price to this information. Cutoff lines are drawn where there are breaks, not at arbitrary scores. Those breaks vary a bit from year to year. **DO NOT - repeat: DO NOT!** - send me an email that says something like, “You said the cutoff for an A was about 81 and I got a 81.0001 and therefore I demand a grade change.”

Lowest A about 81-82
Lowest A minus high seventies
Lowest B plus 72-73
Lowest B about 65
Lowest B minus about 61
Lowest C about 46-47
Lowest D about 40