

NEW YORK UNIVERSITY

Department of Chemistry

Spring 2017

Chem UA 225 Organic I

12 Waverly Place Room G08

Tuesday/Thursday 2:00-3:15

Instructor:	Marcus Weck
Office:	Brown 555, Molecular Design Institute, 5 th floor of Brown
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Email:	marcus.weck@nyu.edu
Office Hours:	Thursday 11:00-noon
Recitations:	Wednesdays between 8:00 am-3:15 pm (starting February 1 st)
Recitation Leader:	Dr. Petra Tosovska pt373@nyu.edu; Office hours: Monday 3 pm-4:30pm

A. Course Description and Interactions

Greetings! This course is intended to introduce you to the major concepts in organic chemistry and prepare you for the upper level chemistry classes you will face in the coming semesters, your research, and the organic requirements for medical schools.

Your primary contact is Dr. Tosovska. All inquiries regarding grading, policies, absences, and any other issues should begin there. Dr. Tosovska will answer your e-mail within a 48 hours period. I have instructed Dr. Tosovska NOT to answer e-mails during the weekend and late at night. Dr. Tosovska works hard and deserves her time off. Make sure you send your questions/requests in a timely fashion. Only after you contacted Dr. Tosovska and her answer is not satisfactory to you should Dr. Weck be approached. Dr. Weck will only entertain requests that include e-mail verification that Dr. Tosovska has been contacted and she ruled on the matter. Students wishing to approach Dr. Weck must make an appointment by email or come to office hours and must provide information regarding prior discussions with Dr. Tosovska and why her ruling is unsatisfactory.

B. Textbook

- The following textbook is available at the Bookstore:

Maitland Jones and Steven A. Fleming, Organic Chemistry, Fifth Edition, ISBN Number 978-0-393-91303-3

This textbook will give you a good introduction into the basic concepts we cover in the course. It also offers you a variety of educational questions that should help you in learning the course material. Midterms and the Final Exam are based mainly on the material and concepts we cover IN CLASS. The assigned chapters in the book are required reading.

- The following Molecular Model Kit is strongly recommended:

Maruzen, HGS Stereochemistry Molecular Model 4010 Student Set

Molecular modeling kits are VERY important. Start making models of as many compounds as possible so that you can visualize compounds in 3D and in your head. You will not survive the stereochemistry part of the class without a model set. Model sets are allowed during exams. If you cannot afford a model set, you can make your own set with play doh and sticks

C. Requirements and Grading

This class is very demanding. We will cover a lot of material VERY fast. The class is designed such that you have to review the class notes and read the book chapters before class for AT LEAST three additional hours every week (not including working on problems). Therefore, at least a ten-hour weekly commitment to the lecture part of this class is expected (class meeting, preparations, recitations, etc.). It is important that you start to review the material early on!

Homework: To be successful in this course, you need to work through every problem set in the back of each chapter. Unfortunately, we do not have the staff to grade all of these. However, these questions are a vital part for passing the exams. They serve as PERFECT study guide for all exams. I strongly urge you to start working on these questions in week one. Starting three days before the first exam will be too late!

Exams: There will be two "midterm" exams plus a final exam. Each midterm exam is worth 700 points. The final is worth 1200 points. Midterms and finals are worth a grand total of 2600 points. If you cannot take a midterm, you must provide an official doctors note (please note that I do not accept a basic note stating that you went to the student health center. I require a note from a doctor stating that you CANNOT ATTEND a class or an exam for medical reasons) or a notification from the Dean of undergraduate studies to be allowed to take the make-up exam. There will be no make-up exam for the final or a second 'midterm' make-up exam date. If you cannot attend the final or you are missing a second midterm, you will get an incomplete in the class and will be required to take the organic chemistry I final (or midterm) in the fall semester with one of my colleagues.

Class Participation: Attendance in lectures and recitation sections is mandatory! Class/recitation participation is an important part of the class. That can be through questions in class or the recitation sessions, answers to questions I pose during class, or other class related activities. Recitation attendance will be taken AT THE BEGINNING of each recitation. Late-comers will not be accounted for. If you miss more than four (4) recitations, 300 points will be automatically deducted from your overall point summary.

Quizzes: The quizzes are part of the recitation sections, will take 10-15 minutes, and can be scheduled at any time during a recitation, i.e. at the beginning or the end. There will be 12 quizzes and each will be worth 50 points. The eight highest quizzes will be counted towards your grade for a grand total of 400 points. There will be NO make-up quizzes for any reasons.

Lab Grade: The laboratory portion accounts for 25% (1000 points) of the overall grade.

Final Grade: Tentative grading scale/scheme are shown below. You must pass the laboratory portion of the class with 55% or higher. If you score below 55% in the laboratory part of the class, you will automatically receive an F in the class (independent of your performance in midterms and finals). I am not using a grading curve in this class. You do NOT have to work against each other. In contrast, this class is so demanding that study groups etc. are strongly encouraged.

Extra Credit: *BACON: Biology and Chemistry Online Notes and Tutorials*

Up to 150 points can be very easily earned by completing 'BACON' tutorials, a handy resource created by students and faculty at UCLA. BACON is an online tutorial designed to help connect the wonders of organic chemistry to medicine, other aspects of real life, and even pop culture. Please note that there is a \$5 charge per student per semester to use this resource. You will have to create an account and log in every time you work on a tutorial.

Each BACON tutorial can be accessed when a specific topic is being introduced in class and you will have two weeks time to complete the tutorial (but for the last one when you will have only ONE week time). You will have eight BACON tutorials available this term (25 points each). Each time you complete a BACON tutorial, you will also complete a brief multiple choice post-BACON quiz (the quiz will be built into the tutorials). We will count the six highest BACON scores for a max of 150 points of extra credit.

To sign up:

1. Visit learnbacon.com and click 'Sign Up' to create your account. If you already have a BACON account, you can sign in and then follow instruction #2.
2. Follow the instructions and then register for the appropriate course. The Course Pin number is 225\$MW.

The BACON system is simple and automated. After you sign up, you will receive emails when tutorials become available, in addition to reminders if you have not completed a tutorial as a deadline approaches.

If you encounter any problems related to BACON during the quarter, please email support@learnbacon.com for help.

There will be NO other possibility for extra credit.

Preliminary Grading Scale:	Two written midterms (1400 points)	35%
	Final exam (1200 points)	30%
	Quizzes (400 points)	10%
	Lab grade (1000 points)	25%
	Extra Credit (150 points)	

Tentative Grading Scheme:	4000-3500 (87.5-100%)	A and A-
	3000-3499 (75-87.49%)	B+, B, B-
	2300-2999 (57.5-74.9%)	C+, C, C-
	2000-2299 (50-57.4%)	D
	0-1999 (<50%)	F

D. General

All students who may need special accommodations for any sort of disability, or know they will have to attend a make-up exam because of a religious holiday, please see me during my office hours or contact me after class. Following NYU's policy, you must contact the MOSES center, fill out the online form, and make sure that I receive the online form/verification at least three

work days BEFORE a scheduled exam (March 7th before noon for exam one, April 18th before noon for exam two, and May 9th before noon for the final). Any reasons for missing an exam/requests for special accommodations after an exam will not be entertained.

No cell phones are allowed in class. No computers are allowed in class. If you have time to text during class, check facebook, etc. I am either too slow and will increase the pace of the class or you are not interested. It is essential to stay engaged throughout the class.

If you cannot take a midterm, you must provide an official doctors note (please note that I do not accept a basic note stating that you went to the student health center. I require a note from a doctor stating that you CANNOT ATTEND an exam for medical reasons) or a notification from the Dean of undergraduate studies to be allowed to take the make-up exam. There will be no make-up exam for the final or a second 'midterm' make-up exam date. If you cannot attend the final or you are missing a second midterm, you will get an incomplete in the class and will be required to take the organic chemistry I final (or midterm) in the fall semester with one of my colleagues.

E. Academic Honesty

It is expected that all students are aware of their responsibilities not to cheat. No 'teamwork' during exams! *Cheating off of another person's test is unethical and unacceptable. Cheating off of anyone else's work is a direct violation of NYU's policies and will be dealt with accordingly. Falsifying an exam (for example before turning it in for a regrade) is cheating and will be reported. Please note that we will copy a couple of exams each time in order to minimize the temptation to falsify them. Any student who is cheating on any exam, will automatically receive a F in the class.*

Use of any previous semester course materials is allowed for this course. However, I remind you that while they may serve as examples, they are not guidelines for any tests.

All information required for exams will be supplied. No notes, books, etc. are allowed during the exams. All paper needed during the exams will be supplied. The use of programmable calculators AND cell phones during exams is not allowed. If we find a cell phone or calculator, *i.e.* they are NOT in a closed environment such as your CLOSED and LOCKED bag but open in an open bag, on your chair, on the bench, etc., it is viewed as a direct violation and will be viewed as cheating. It results in the confiscation of your exam, which will be graded automatically as zero points and you will be asked to leave the room. **Pencils are NOT allowed for the exams. You are required to come equipped with a non-erasable pen.**

We all make mistakes. It will happen that we make mistakes during grading of an exam. I apologize in advance but we grade hundreds of exams. For re-grading, you have to hand in your exam within one week after the distribution. You have to include a detailed written statement why a question should be re-graded, *i.e.* a statement such as 're-grade question 2' is not acceptable. You must sign and use the form online to submit a re-grade. Tell us why you think your answer deserved more points. Do NOT make any marks on the exam (any marks directly invalidate any exams for re-grading). Note that you hand in your complete exam. We will re-grade the whole exam. While your grade may go up, it can also go down.

All students who violate the honor code will receive a F in the class and reported to the Dean's office, no exceptions.

F. Tentative Dates

Exams:

First Exam:	02-28-17	in class
Second Exam:	04-20-17	in class
Make Up Midterm Exam:	05-04-17	TBD
Final:	05-10-17	10:00am – 11:50am

G. Basic Advise to Succeed in Organic Chemistry

- *Attend each lecture!*
- *Stay on top of the material. Start working on day 1 not just before the exam.*
- *Learn the concepts and fundamental of organic chemistry. You cannot memorize millions of compounds and thousands of reactions.*
- *Ask questions! Don't be shy. If you do not understand something, other students might have the same problems. In any case, speak up.*
- *Contact Dr. Tosovska if you have problems.*

H. Course Schedule (Tentative)

	Lecture Topic	Tentative Dates	Mandatory Readings
	Introduction	01.24	
I.	Atoms and Molecules; Orbitals and Bonding Atomic Structures and Properties Bonding and Lewis structures Charges and Resonance Structures Shapes of Orbitals and Molecules Basic Functional Groups	01.24 – 01.26	Chapter 1
II.	Alkanes Hybrid Orbitals Methyl, Methyl Cation, Methyl Anion, Methyl Radical Higher Order Alkanes Newman Projection Nomenclature Cyclic Alkanes Properties of Alkanes	01.31 – 02.02	Chapter 2
III.	Alkenes and Alkynes Structure, Isomers, and Nomenclature of Alkenes Cahn-Ingold-Prelog Cyclic Alkenes Properties of Alkenes Structure, Isomers, and Nomenclature of Alkynes Cyclic Alkynes Properties of Alkynes Electronegativity Basic Addition Reactions Regiochemistry of Addition Reactions	02.07 – 02.16	Chapters 3 and 10
IV.	Spectroscopy Mass Spec. IR NMR	02.21 – 02.23	Chapter 9
V.	Stereochemistry Chirality Enantiomers Diastereomers Assigning Chirality: R/S Nomenclature	02.28 – 03.09	Chapter 4
	First Exam	02.28.17	Chapters 1–3, parts of 4, 9 + 10
	No Class (Spring Break)	03.14 – 03.16	

VI.	Rings Ring, Strain and Strain Energy Cyclohexane Substituted Rings Bicyclics and Polycyclics	03.21 – 03.23	Chapter 5
VII.	Functional Groups Alkyl Halides Alcohols Amines Ethers Thiols and Thioethers	03.28 – 04.04	Chapter 6
VIII.	Substitutions and Eliminations Lewis Acids and Lewis Bases S _N 2 Mechanism and Reactions S _N 1 Mechanism and Reactions E ₁ Mechanism and Reactions E ₂ Mechanism and Reactions How to Predict and Utilize these Reactions?	04.06 – 04.13	Chapters 7 and 8
IX.	Equilibria Rates, ΔG , ΔH , and ΔS Energy Barriers Hammond Postulate	04.18	Notes
Second Exam		04.20.17	Chapters 5 – 8
X.	Additions to Alkenes and Alkynes Mechanism and Regiochemistry of Alkene Addition Resonance Polymerizations Rearrangements Oxymercuration Dipolar Addition Hydration and Hydroboration	04.25 – 05.02	Chapters 10 and 11
X.	Radical Reactions Formation, Stability and Structure of Radicals Addition Reactions Involving Radicals Rearrangements Using Radicals	05.04	Chapter 12
Make Up Exam for Midterms		05.04.17	11:00am – 12:15pm
Final (tentative)		05.10.17	10:00am – 11:50am