

CHEM 222 - ORGANIC CHEMISTRY I Fall 2019

Instructor:

Dr. Manashi Chatterjee
Office: 1319 Hunter North (HN)
Telephone: (212) 772-5377
Email: chatterjeehunterchemistry@gmail.com

Office Hours (1319 B): Tuesday: 4:00 – 6:00 PM

Lecture: Tuesday/Friday 1:10 - 3:00 PM, HN 118 (Assembly Hall)

For the most up-to-date contact information and office hour details: please see the “instructor” tab on Blackboard, where you will find this information for the professor, recitation instructors, and peer TAs.

Recitation Instructors:

Rebecca Malakhov-Ruvinsky: Rebecca.Ruvinsky56@myhunter.cuny.edu
Lazaro Angeles: Lazaro.Angeles86@myhunter.cuny.edu
Francesca Dorwart: Francesca.Dorwart23@myhunter.cuny.edu
Jessica Malcolm: Jessica.Malcolm19@myhunter.cuny.edu
Dr. Manashi Chatterjee: chatterjeehunterchemistry@gmail.com

Wiley Plus Student Partner: Peer Teaching Assistants will help you with any Wiley Plus related question.

Molly Bekbolatova: Molly.Bekbolatova71@myhunter.cuny.edu

Peer Teaching Assistants:

(Former Organic Chemistry students who have excelled in this class and have agreed to volunteer their time. They will hold office hours to help you achieve your learning goals, assist us during lecture to answer questions, and help with WileyPLUS homework questions and issues.)

Recitation Instructors:

Office Hours: In 1319 B HN

unless otherwise specified on BB

Please visit office hours regularly. We are here to help you succeed!

The room holds 10 – 15 students. We help students in groups so you can attend and learn from you're the questions your peers have.

Note: CHEM 223LB - ORGANIC CHEM I (LAB) is a parallel but separate course. If you have any questions, please contact the lab course coordinator, Dr. Manashi Chatterjee. You must also enroll in 223 RC if you are enrolled in lab. For information on Organic I lab Recitation: Please contact Alison Domzalski ad2459@hunter.cuny.edu

A student taking a four credit course that meets for four hours a week should expect to spend at least an additional eight hours a week on coursework outside the classroom.

Common Courtesy:

Phones (texting) and computers (unless used for taking notes) must be turned off during the Lecture, Exams and Recitations.

YOUR CLICKER POINTS FOR THE DAY WILL BE FORFEITED IF YOU DISTURB THE CLASS

Textbook and Course Materials:

1. David Klein, Organic Chemistry, Third Edition is required. A complete online version of the textbook is included with WileyPLUS.
2. WileyPLUS online Homework - register from BB, see separate announcement on blackboard for instructions.
3. A PRS transmitter "i-clicker", which will be used for in-class discussions and quizzes.
4. A set of *molecular models* is highly recommended. It is often difficult for students to learn how to visualize a molecular structure in three dimensions. Models will almost certainly help. If you want to take a look at models before buying some, come by my office.

Type A: These can be purchased at the bookstore - MOLECULAR VISIONS™ Model Kit [MolecularVisions.com] from the Darling Model site OR from Amazon.com

**KIT #1B ISBN 978-09648837-3-4 -In a Plastic Bag --Organic, I OR
KIT #1 ISBN 978-09648837-1-0 -Plastic Box -- Organic, Inorg**

Type B) <http://hgs-model.com/model/index.html>

Type C) MolyMod **Organic (Student) Set Article Ref: MMS-008 (from Amazon or ebay)**

Website:

Materials related to this course, including this syllabus, announcements, course documents, exam keys, and grades will be posted on Blackboard.

Be sure to check and update your email address associated with Blackboard. It is imperative that you check your Hunter email as well as Blackboard regularly.

Prerequisites: "C" or better in CHEM 104 or equivalent.

It is suggested that you review your general chemistry notes, especially topics on periodic trends, atomic structure and acids and bases at the beginning of the course.

Course Objectives:

CHEM 222 is the first semester of organic chemistry and is designed to follow a one-year course in general chemistry. It assumes a general knowledge of atomic structure, chemical bonding, acids/bases, reaction stoichiometry, equilibria, transition states, and free energy.

Most biological processes involve organic chemistry; understanding most biological processes at the biochemistry level requires knowledge of organic chemistry. While the second semester course

(CHEM 224) will focus much more on synthetic chemistry and on the organic chemistry of biological processes, CHEM 222 will provide you with a strong introduction to the basic principles of organic chemistry related to process involved in life and society.

- How to name compounds and how to “build” compounds from their names?
- How to recognize and predict common bonding patterns; how to predict molecular structure from a formula?
- How to predict the shapes of organic molecule, including those capable of existing in multiple forms (conformations)?
- The properties, importance, and reactivity of some common functional groups: alkanes, alkenes, alkynes, alkyl halides, aromatic compounds, alcohols.
- How to predict whether reactions will occur and how fast they might occur; reaction transition states; reaction intermediates such as carbocations and free radicals?
- The fundamentals of organic synthesis (how to construct larger, more complex structures through controlled application of organic reactions).
- The importance of stereochemistry.

Overall, the study of organic chemistry teaches as skill set and a logical pattern of thinking that is prized in many fields.

GOALS:

GOALS: The student will develop an understanding of-

1. Bonding and three-dimensional structure of carbon based compounds.
2. Nomenclature of organic compounds
3. Organic chemical reactions and their mechanisms.

OBJECTIVES:

At the end of the class the student will be able to-

- ___ demonstrate a knowledge of the hybridization of the carbon atom
- ___ demonstrate a knowledge of the three dimensional nature of carbon based compounds
- ___ identify and name organic compounds, using the proper nomenclature
- ___ draw structures (condensed and structural) of compounds
- ___ demonstrate an understanding of chirality and stereochemistry
- ___ demonstrate a knowledge of free radical reactions
- ___ demonstrate a knowledge nucleophilic substitution reactions
- ___ determine which substitution mechanism is operating (S_N1 or S_N2)
- ___ demonstrate a knowledge of elimination reactions
- ___ determine which elimination mechanism is operating ($E1$ or $E2$)
- ___ predict the products of reactions
- ___ write a reaction scheme to produce desired product
- ___ understand how stereochemistry affects reaction
- ___ understand how IR spectroscopy and Mass spectrometry can be used for structure determination

Recitations: Recitations will focus on problem solving and reviewing material that is being covered in class. **You will have a 20-minute quiz during some recitations.** See schedule below. Recitation attendance is mandatory. **Your TA may use, at their discretion, other unannounced quizzes to determine your participation and preparation during recitation.**

NOTE: Attending all recitations does not guarantee full 30 points. Participation does not mean attending all recitations or raising hands to ask questions. In addition to problem solving during recitation, you will be asked to hand in one problem at the end of recitation. Your recitation

instructor will randomly assign this during recitation or find a way to evaluate your performance. A combination of many factors will determine your level of participation and finally determine your recitation points.

Any student who submits a grade appeal based on recitation points assigned by recitation instructor will have their bonus assignment points and bonus points on exams will be removed/ forfeited before determining their letter grade.

Sec 1R01	9:10 - 10:00AM	Tuesday	West Bldg W217	Lazaro Angeles
Sec 1R02	10:10 - 11:00AM	Tuesday	West Bldg W217	Lazaro Angeles
Sec 1R03	9:10 - 10:00AM	Friday	West Bldg W217	Lazaro Angeles
Sec 1R04	10:10 - 11:00AM	Friday	West Bldg W217	Lazaro Angeles
Sec 1R05	5:10 - 6:00PM	Thursday	West Bldg W217	Dr. Manashi Chatterjee
Sec 1R06	4:10 - 5:00PM	Thursday	West Bldg W217	Dr. Manashi Chatterjee
Sec 1R07	6:10 - 7:00PM	Thursday	West Bldg W217	Rebecca Ruvinsky
Sec 1R08	7:10 - 8:00PM	Thursday	West Bldg W217	Rebecca Ruvinsky
Sec 1R09	5:10 - 6:00PM	Monday	West Bldg W217	Jessica Malcolm
Sec 1R10	8:10 - 9:00AM	Friday	West Bldg W217	Rebecca Ruvinsky
Sec 1R11	4:10 - 5:00PM	Monday	West Bldg W217	Jessica Malcolm
Sec 1R12	12:10 - 1:00PM	Tuesday	West Bldg W217	Jessica Malcolm
Sec 1R13	4:10 - 5:00PM	Friday	West Bldg W217	Francesca Dorwart
Sec 1R14	5:10 - 6:00PM	Friday	West Bldg W217	Francesca Dorwart
Sec 1R15	6:10 - 7:00PM	Friday	West Bldg W217	Rebecca Ruvinsky
Sec 1R16	8:10 - 9:00AM	Tuesday	West Bldg W217	Jessica Malcolm
Sec 1R17	6:10 - 7:00PM	Monday	West Bldg W217	Francesca Dorwart
Sec 1R18	7:10 - 8:00PM	Monday	West Bldg W217	Francesca Dorwart
Sec 1R19	4:10 - 5:00PM	Wednesday	West Bldg W217	Dr. Manashi Chatterjee
Sec 1R20	5:10 - 6:00PM	Wednesday	West Bldg W217	Dr. Manashi Chatterjee

Grading: Grades will be based on a total of 730 points

Clicker questions	70 pts	(total clicker points will be scaled to 70 pts)
Electronic Homework (WileyPLUS)	70 pts	(total Online HW points will be scaled to 70 pts)
Recitation Participation	30 pts	
Quizzes (3 x 20)	60 pts	
Midterms (3 x 100)	300 pts	
Comprehensive Final	200 pts	

Grading Scale: Over the years, the average GPA for CHEM 222 has ranged from 2.25 to 2.75; the actual average grade in a given course can vary tremendously with the background, talent, and work ethic of students in that course. If your score falls in a given bracket (below), you are guaranteed to receive at least that grade. This is an extremely fast passed course and requires consistent effort throughout the semester.

A+: 694 and above	A : 657 - 693	A- : 636 - 656
B+: 621- 635	B : 548 - 620	B- : 511- 547
C+: 475 - 510	C : 438 – 474	
D : 402 - 437	F : 401 and below	

Exams:

- Exams will draw from lecture, text, and assignments/online HW, recitation problems, practice problems to name a few. Molecular models may be used during exams. No other notes, materials, or electronic devices are permitted. Phones and computers must be turned off during the exams; no communication of any sort is permitted. **Recitation Quiz will be based on any material covered in class and recitation till the day before you take your quiz. Practice exams will be posted on BB.**
- Missed Exams: **NO MAKE UP EXAMS OR QUIZZES:** In any class this large, there will be emergencies that cause students to miss exams. In the event of a verified emergency (medical or death in family), the student is to contact Dr. Chatterjee by **email and in person as soon as you get back.** If, in my judgment, the excuse is valid, **I will substitute your final exam percentage for the test grade.** If you miss more than one test you will have to withdraw. I will require you to bring a Proof to document your absence for any missed exam. IF YOU MISS THE FINAL FOR A VALID REASON – YOU WILL EARN GET AN “INCOMPLETE” IF YOU MAINTAINED A PASSING GRADE OR BETTER PRIOR TO FINAL IN ALL EXAMS ADMINISTERED IN COURSE. YOU WILL HAVE TO TAKE THE MAKE UP WITH THE INSTRUCTOR WHO WILL BE TEACHING THE FOLLOWING SEMESTER. IF YOU HAVE HAD A FAILING GRADE TILL THE FINAL AND MISSED THE FINAL EXAM YOU WILL EARN - F OR A NCr.
- Graded exams will be available outside 1319 HN (Professor Chatterjee’s office). Any requests for re-grades must be submitted to Dr. Chatterjee or your TA within 48 hours. Please note that the entire exam will be re-graded. **Any alterations of exams submitted for re-grade will be treated as academic dishonesty. All exams are subject to being photo copied before they are returned.**
- There will be no re-grade on the Final. **The final will not be returned.** You can visit me in person in Spring 2020 to take a look at your final if you believe a major grading (addition) error has occurred.

Clicker Quizzes:

The PRS i-clickers, along with iPads will be used to facilitate classroom discussion and group learning as well as to administer short quizzes during many/most lectures on materials presented in the previous lectures or current lecture.

Please register your clicker on the clicker website. Announcement (steps to register) will be posted on BB.

- During the first AND second lecture, we will use the i-clickers for several short exercises to make sure everyone is ready to use the system. Beginning in the THIRD LECTURE, we will have clicker questions in most lectures, AND THEY WILL COUNT TOWARDS CLICKER POINTS.
- There are no make-ups for missed clicker or if your clicker is not working and you can not join the class.
- Misrepresentation of identity on a clicker quiz is academic dishonesty.
- Points you earn over the semester will be scaled to 70 points. I will scale so that you can miss 10 % of the clicker questions and still earn full points. This will take care of the day you miss class or your clicker did not work.
- i-clicker 2 can be purchased at online.

<https://store.macmillanlearning.com/us/product/iClicker2-student-remote/p/1498603041>

Electronic Homework:

Information to purchase WileyPLUS code has been posted on BB as an announcement.

WileyPLUS will be a useful practice/study tool, which will be used as an additional learning resource along with Klein's text. Homework will be scaled to 70 pts. You will be able to attempt each question 1 time without penalty and 3 times with a % deduction (policy subject to change based on question type). You are responsible for completing the assignments by the deadlines (these will show up on the online homework link). You may need to get a little practice using MarvinSketch or the embedded drawing software. Please do not leave to work on the online HW till the due date. The last HW will be due during week 15 and will be part of your grade. **Misrepresentation of identity on an online HW (whether you pretending to be someone else or sharing passwords) is academic dishonesty.**

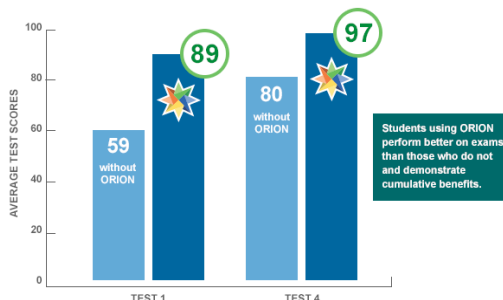
Your overall homework grade will be taken by determining what possible homework points that you earned. That is, homework grade = (your total homework points/maximum homework points possible) * 70

Some questions may have software problems which your instructor will report to Wiley. Please do not get worked up and spend a lot of time in solving such questions to get to 100%. I will try my best to remove these questions or make an announcement as soon as it comes to my attention. Read instructions carefully: drawing all lone pairs, use correct arrows (radical, resonance, curved arrow) and get help if you miss the first two attempts. **To account for problems that have software issues you will be assigned full points on the HW when you score 90% or above and other scores will be scaled accordingly.**

WILEYPLUS Resources from BB (in addition to the Online HW)

Please visit the WileyPLUS Reading resources where you will find the entire textbook online, selected videos, solved problems and **ORION Adaptive Learning**

Research shows that students who have used ORION for just a few minutes per week have shown improved test scores.



http://www.wiley.com/college/sc/oriondemo/research.html?elq_mid=1056&elq_cid=734108

**THERE ARE NO POINTS FOR ORION
IT WILL PROVIDE ADDITION PRACTICE PROBLEMS THAT YOU CAN USE TO
UNDERSTAND WHERE YOU NEED HELP**

Using ORION does not guarantee any letter grade or % or passing the course

Review Sessions: Special review sessions (1-2 h) will be arranged before midterms and finals. Location and schedule will be posted on the black board and announced in class.

Incomplete, C/NCr, Add/Drop, Withdrawal: An incomplete (IN) grade will only be considered for a student who has completed the majority of the course and is unable to complete the course due to health reasons, military service, hardship or death in the immediate family. The course will follow standard Hunter College policies and deadlines for add/drop, C/NCr, and withdrawing.

Policy on Incomplete grade: Incomplete (IN) grade may be given if a student has a reasonable chance of passing the course but cannot complete it because of a valid reason. In order to be considered for the IN grade, students need to present verifiable proof.

Policy on CR/NC grade: The CR/NCr request will not be accepted after the final exam. Announcement on when and where to submit form will be made before the final exam starts. See the Hunter College Catalog or visit <http://md2.hunter.cuny.edu/webgrade/regmemo.jsp> for College grading policy on CR/NCr, INC, WU, etc.

Academic Honesty:

Any case involving academic dishonesty (see "Code of Conduct" in *Undergraduate Bulletin*) will result in a **failing grade for the student(s) involved** and will be reported to the Director of Student Judicial Affairs. Any student found cheating will be subject to the penalties stated in the Code of Student Conduct; including, but not limited to, a score of zero on exam, expulsion from the class, or expulsion from the University. If a student is accused of cheating in a lecture course in the chemistry department, the student's case will be submitted to the Office of Student Conduct. If the student is found guilty of cheating on an exam, the student will be given an exam grade of 0 but will be allowed to continue in the course. The student will receive an Academic Sanction. The student's grade will be calculated with the zero and the student will be permitted to pass the **course with the highest grade possible grade of C** (if the student does in fact pass the course). If any student requests a re-grade of a test, that student's future tests will be copied.

Students with Disabilities:

Accommodations are provided for students who are registered with AccessABILITY Services and make their request sufficiently in advance to take exams and final at the accessibility center. It is recommended that you take **quiz during recitation** so that you do not miss the later half of the recitation problem solving session, but it is your choice. You will be **only allowed to take exams and finals at AccessABILITY Center on the same day and time when the CHEM 222 class takes their exam.**

Access & Technology Center Hours of Operation: Location: **Room 300, North Building**

<http://www.hunter.cuny.edu/access/services-programs/accesscenter>

AccessABILITY information:

"In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical and/ or Learning) consult the Office of AccessABILITY located in Room 300 HN to secure necessary academic accommodations.

For further information and assistance please call Access Center (212- 772- 4857)

Please book an appointment with me for signatures on any forms.

I will not be signing forms in the hallway or lecture hall.

Please visit the website below (cut and paste on a browser) and select Dr. Chatterjee.

<http://www.hunter.cuny.edu/chemistry/advising>

Chemical Dynamics and Reactivity: Introduction to Organic Chemistry
Tuesday and Friday 1:10PM - 3:00PM, North Bldg 118 (HN Assembly)

Week 1	T	Aug 27	Ch 1	(Review General Chemistry)
	F	Aug 30	Ch 1	(Review General Chemistry)
Week 2	T	Sep 03	Ch 2	(Molecular Representations)
<i>Note: Thursday Sep 5 - Monday Schedule</i>				
	F	Sep 06	Ch 2	(Molecular Representations)
<u>Week 3</u>	T	Sep 10	Ch 14	(IR Spectroscopy Portion)
<u>(Quiz I)</u>	F	Sep 13	Ch 3	(Acids and Bases)
Week 4	T	Sep 17	Ch 3	(Acids and Bases)
	F	Sep 20	Ch 4	(Alkanes and Cycloalkanes)
<u>Week 5</u>	T	Sep 24	Exam-1 (Ch-1, 2, 3 and Ch-14-IR)	
	F	Sep 27	Ch 4	(Alkanes and Cycloalkanes)
Week 6	T	Oct 01	<i>No Class</i>	
	F	Oct 04	Ch 5	(Stereochemistry)
Week 7	T	Oct 08	<i>No Class</i>	
	F	Oct 11	Ch 5	(Stereochemistry)
Week 8	T	Oct 15	Ch 6	(Reactivity and Mechanism)
<i>Note: Wednesday October 16 - Monday Schedule</i>				
	F	Oct 18	Ch 6	(Reactivity and Mechanism)
<u>Week 9</u>	T	Oct 22	Ch 7	(Substitution Reactions)
<u>(Quiz II)</u>	F	Oct 25	Ch 7	(Substitution Reactions)
Week 10	T	Oct 29	Ch 7	(Alkenes-Structure and Preparation-Elimination Reactions)
	F	Nov 01	Ch 7	(Alkenes-Structure and Preparation-Elimination Reactions)
<u>Week 11</u>	T	Nov 05	Exam-2 (Ch- 4, 5, 6 and 7)	
	F	Nov 08	Ch 8	(Addition Reactions of Alkenes)
Week 12	T	Nov 12	Ch 8	(Addition Reactions of Alkenes)
	F	Nov 15	Ch 9	(Alkynes)
<u>Week 13</u>	T	Nov 19	Ch 9	(Alkynes)
<u>(Quiz III)</u>	F	Nov 22	Ch 10	(Radical Reactions)
Week 14	T	Nov 26	Ch 10	(Radical Reactions)
	F	<i>Nov 29 Thanksgiving Holiday (Thr-Nov 28 to Sun-Dec 01)</i>		
<u>Week 15</u>	T	Dec 03	Ch 14	(Mass Spectrometry portion)
	F	Dec 06	Exam-3 (Ch-8, 9 and 10)	
<u>Week 16</u>	T	Dec 10	Ch 11	(Synthesis)
	F	Dec 20	Final (Comprehensive)	
		Note different time: (11.30 am to 1:30 pm)		

Three quizzes (20 points each) will be held during recitation [Week 3, 9, and 13].

Note all exams and quizzes are cumulative and will require knowledge of previous chapters and general chemistry.

Holidays or No class or Monday Schedule:

Monday, September 2 (College closed)
Thursday, September 5 (Classes follow Monday schedule)
Monday, September 30
Tuesday, October 1
Tuesday, October 8
Wednesday, October 9
Monday, October 14 (College closed)
Wednesday, October 16 (Classes follow Monday schedule)
Thursday, November 28 (College closed)
Friday, November 29 (College closed)
Thanksgiving Holiday (Thr-Nov 28 to Sun-Dec 01)

Important Dates: (Please confirm the dates on the Hunter college website)

Sep. 2 (College Closed)

Last day to drop a full semester course and receive 75% refund

Last day to add a courses: Fall registration ends at 11.59 pm

Sep. 9

Last day to drop for 50% tuition refund

Sep.17

First Day of Withdrawal with 'W' Grade (No Refund of Tuition)

Nov. 5

Last Day of Withdrawal with 'W' Grade

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This schedule provides a tentative timeline for Fall 2019: Professor Chatterjee reserves the right to update, modify and make changes as required.

The updated versions will be posted on BB.

Good Luck and Have a Great Semester!!!!

Please make use of all the wonderful resources that the chemistry department has to offer to help you succeed.