

Chemistry 2213a Course Outline (2009–2010)

Organic Chemistry for Life Sciences

Mandatory Notice from the Registrar

Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites. The prerequisite for this class is Chemistry 1050, 1024a/b, or the former 1020, 020, 023, or 024a/b. The website of the Office of the Registrar is <http://www.registrar.uwo.ca>.

Course Website

Students should check WebCT (<http://owl.uwo.ca>) on a regular basis for news and updates. Please contact the course instructor if Chem 2213a does not appear as one of your WebCT courses.

Lecture Sections and Instructors

Lecture Section	Time and Room	Instructor	Office	Email
001	MWF 12:30 – 1:30 NS 145	Dr. Mark Workentin (Lab coordinator)	CHB 223	instrmsw@uwo.ca
002	MWF 1:30 – 2:30 NS 145	Dr. Felix Lee (Course coordinator)	MSA 1202	flee32@uwo.ca

In lieu of instructors' office hours for course material, the course will be offering free assistance at the Resource Room, which is located in MSA 1205. Schedules will be posted on WebCT. If you wish to meet with your instructor about confidential matters, please send an email for an appointment.

If you email your instructor, you must use your Western email address and include *Chem 2213a* in the subject line. Email should only be used for administrative purposes and not for questions related to course material (such as how to do a particular question in the book). Questions related to course material should be posted on the WebCT discussion board or asked at the Resource Room

Course Materials

In addition to proper lab attire, the materials below are required and are available at the bookstore.

- *Introduction to Organic Chemistry*, Brown and Poon, 3rd edition (2005) and the *Student Solutions Manual* (Erickson, Brown, and Poon, 2005)
 - Both the textbook and the solutions manual are available at a bundled price.
- Chemistry 2213a Laboratory Manual, 2009 – 10 edition
 - Old editions may not be used. Students repeating the course will require a new manual. The lab manual also contains information regarding proper lab attire.
- Molecular Model Kit

Course Topics and Approximate Schedule

Chapter	Topic	Week #
1	Structure and Bonding (primarily assumed knowledge)	1
2	Acids and Bases	1 + 2
3	Alkanes and Cycloalkanes (primarily assumed knowledge)	2
4	Alkenes and Alkynes (primarily assumed knowledge)	3
5	Reactions of Alkenes	3 + 4
6	Chirality (some assumed knowledge)	4
11	Infrared Spectroscopy (primarily assumed knowledge)	5
12	¹³ C-NMR Spectroscopy	5
7	Haloalkanes	5 + 6
8	Alcohols	7
9	Benzene and Derivatives	7 + 8
10	Amines	8 + 9
12	¹ H-NMR Spectroscopy	9
13	Aldehydes and Ketones	10 + 11
14	Carboxylic Acids	11 + 12
15	Derivatives of Carboxylic Acids	13

The cutoff for the midterm test will be announced as the date approaches. The final exam is cumulative but will focus on the material covered after the midterm test.

Evaluation

Components

The overall course grade, out of 100, will be calculated as listed below. Listed next to the respective components are their corresponding maximum values toward the course grade.

Component	Notes	Total Value
Midterm Test	Saturday, October 24, 7:30 – 9:45 PM	35
Final Exam	Scheduled by the Registrar, 3.0 hours	50
Laboratory	Five experiments (3.00 each)	15

Important: To obtain credit for the course, it is necessary to obtain both a minimum of 50 out of 100 on the overall course grade *and* a minimum of 7.50 out of 15.00 on the laboratory component. The latter is calculated from all five experiments. A missed experiment is assigned a grade of zero unless it is excused (see Missed Course Components). Students who miss more than three experiments, whether excused or not, cannot be given course credit.

There are no make-up labs or midterm test. See Missed Course Components for more details.

All labs, tests, and exams count. None of the components will be “dropped” and it is not possible to have the components reweighed unless they were legitimately missed.

Students who arrive unprepared or late for a lab will receive a zero for that lab. No credit will be given for the pre-lab exercises. Students are deemed unprepared if they arrive in inappropriate attire or without a completed pre-lab, or possess a plagiarized pre-lab, old lab report, or report with pre-filled observations. Students are deemed late if they arrive after the lab doors have closed. Lab technicians and teaching assistants have the right to eject students from the lab.

It is Faculty of Science policy that a student who chooses to write a test or exam while ill is deemed medically fit to write and the student must accept the mark obtained. If you become ill *during* a test or exam, please contact your Dean’s Office immediately after the test or exam.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website: <http://www.uwo.ca/univsec/handbook/appeals/scholoff.pdf>. Computer-marked, multiple-choice tests and exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

No electronic devices (phones, MP3 players, etc.) may be in your possession during tests and exams, even for timekeeping purposes.

Students are encouraged to make use of the free, study-skills courses and other services provided by the Student Development Centre, <http://www.sdc.uwo.ca>.

Missed Course Components

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or supporting documentation to your Dean's Office as soon as possible and contact your instructor immediately. It is the responsibility of the student to make alternative arrangements, if applicable, with his or her instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from your Dean's Office immediately. For further information please consult the university's medical illness policy at http://www.uwo.ca/univsec/handbook/appeals/accommodation_medical.pdf.

A student requiring academic accommodation due to illness must use the Student Medical Certificate (https://studentservices.uwo.ca/secure/medical_document.pdf) when visiting an off-campus medical facility. For visits to Student Health Services, request a Records Release Form, which is located in the Dean's Office.

Missed Midterm Test or Final Exam

There is no make-up midterm test. If the Dean's Office has approved your circumstances, the value of the midterm test will be shifted to the Final Exam.

If you miss the Final Exam, contact your Dean's Office as soon as possible. They will assess your eligibility to write the Special Exam (SPC).

In accordance with Registrar guidelines, we will approve an SPC exam if you have three exams in three consecutive periods (*e.g.* 2 pm, 7 pm, 9 am). However, we will not authorize SPC exams for those with three exams in four or more periods, nor for those with conflicts. The Registrar will accommodate conflicts in designated conflict rooms.

Missed Experiments

There are no make-up labs, and it is not possible to reschedule labs. If you miss a lab for any reason, you will be assigned a grade of zero for that lab. If the missed lab is due to a legitimate absence, the zero will be replaced by a mark of EXCU (excused), which shifts the weight of the missed lab onto all other unexcused labs. You must, in a timely manner, (1) contact the Dean's Office, **and** (2) complete a *Missed Lab Application* from WebCT and drop it off at the Chemistry Office (room 119) for Dr. Mark Workentin.

Since tests and exams will contain questions related to the theoretical aspects of the experiments, students are responsible for the material pertaining to the missed labs.

Legitimate absences and reasons are those that are approved by the Dean's Office. Note that missing a lab due to a conflict with a test/exam in another course is not a legitimate reason. University policy specifies that an instructor who holds a test/exam at the same time as your regularly scheduled class, lab, or tutorial must accommodate you.

Equal Opportunity and Evaluation Policy

Your instructors were, at one time, students themselves. Accordingly, they thoroughly understand the importance of course grades and the hard work that you will invest into this course. They are there to help you succeed in Chemistry 2213a.

All students are evaluated using the criteria and their respective weightings presented in this course outline; these criteria are based strictly on actual achievement, not on effort or how hard the student tried. We do not offer supplementary assignments, essays, tests, experiments, or other extra work of any sort as a means of increasing a student's marks. It would simply be unfair to the other students. After all, how would you feel if the person sitting next to you were provided with the opportunity to do an assignment for extra marks and you weren't?

Laboratory Schedule

Labs are in rooms 111 and 112 of the Chemistry Building. Your room will be assigned when you arrive for your first experiment. You must attend the section in which you are registered* and be in your assigned room. Sorry, we cannot accommodate requests to switch rooms. Section changes must be completed prior to the end of the university add/drop period (September 18).

Every course has its own lab schedule. Do not assume that because another course does not have a lab during a certain week, Chem 2213a does not have a lab either, and vice versa. If you miss a lab due to your not following this schedule, you will receive a zero on that lab. **No labs the week of October 12.**

Note that unlike first-year chemistry, there is no "lab check-in." Your first time at the lab will be for Experiment 1, so it is your responsibility to come prepared and in appropriate attire.

Experiment	Sections 003 to 016	Sections 017 to 029
1. Melting Point and Recrystallization	Week of September 21	Week of September 28
2. Separation of a Mixture by Extraction	Week of October 5	Week of October 19
3. Synthesis of Cyclohexene	Week of October 26	Week of November 2
4. Preparation and Reactions of Alkyl Halides	Week of November 9	Week of November 16
5. Carbonyl Compounds and Aspirin	Week of November 23	Week of November 30

*Due to unpredictable changes in enrollment, you may need to perform your lab in a section that is different from your section of registration (but on the same day of the week and time). You will be notified, by email, prior to Monday, September 21, if applicable.

How to Excel in Organic Chemistry...

1. Staying on top of the material is the most important thing to do!

Organic chemistry is cumulative. Concepts build on top of previously learned concepts. Former Chem 2213a students have mentioned that virtually all of their friends who stayed on top of the material performed well. Likewise, 95% of the students who performed poorly in the course admitted that it was because they either fell behind or didn't put much effort into the course.

2. Learn and understand the course material – don't just memorize it.

Our studies have shown that students who learn the course material by memorizing it or studying it superficially perform worse than students who examine the material in detail and thoroughly understand it. Learn *why* something is the way it is, not just *what* it is.

3. Focus on the "big picture" and make connections.

Look for similarities between different organic reactions. Use fundamental principles to explain the reactivity of functional groups. How does one chapter relate to the next?

4. Learn from the textbook and old-exam questions – don't just figure out what the answer is.

When working on questions from the textbook and the old exams, your objective should not be to simply get the answer. Rather, focus on the concepts, the approach, the thought process, how to arrive at the answer, and of course, why the answer is the answer!

5. If you have questions about the course material, do not wait until the week of the midterm.

Ask questions as soon as they arise. Take advantage of the WebCT discussion board and the Resource Room. Also note that if you wait until just before the midterm, the Resource Room and your instructors will be swamped. Ideally, you want to be at the point where you have nothing much to ask during the week of the midterm.

6. Don't just come to class – get something out of coming to class!

Be attentive. Listen. Participate. Think. Write down important points. However, try to avoid spending so much time writing that you're not thinking.

7. Take an interest in the material, or at least appreciate its importance.

Organic chemistry is relevant to everyday life. Think about all the organic molecules around you, all the enzyme-catalyzed reactions that are taking place inside our bodies, and how a tiny change to a single, simple functional group in a protein could result in a serious disease.