

# Chemistry 2213a Course Outline 2018

## Organic Chemistry for Life Sciences

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### Mandatory Notice from the Registrar

Unless you have either the prerequisites for this course or written special permission from your Dean to enrol 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 1301A/B AND 1302A/B. The website of the Registrar is <http://www.registrar.uwo.ca>.

### Course Website

A common OWL website has been created for all students enrolled in Chemistry 2213a. It is the student's responsibility to check OWL (<http://owl.uwo.ca>) on a regular basis for news and updates. The missing of critical information due to failure to check OWL cannot be used as a basis for appeal.

ON-line lecture resources (partial lecture notes) and lecture presentations will be made available through OWL. Students are responsible for embellishing their own notes.

### Instructor and Lecture Information

Lecture Section	Time and Room	Instructor	Email
200	MWF 12:30 – 1:20 NS 145	Professor Mark Workentin	<a href="mailto:mworkent@uwo.ca">mworkent@uwo.ca</a>
201	MWF 1:30 – 2:20 NS 145	Still Professor Workentin	<a href="mailto:mworkent@uwo.ca">mworkent@uwo.ca</a>

**Follow me on Twitter and Instagram: @WorkentinChem also @WesternuChem**

If you wish to meet with Dr. Workentin, I am generally available right after lecture each day. I will also host on-line Blackboard Collaborate office hours and will be (on occasion) at the resource room. Otherwise, please send an email for an appointment using your Western email account (see below).

### Email Policies

Use your Western email account (<http://mail.uwo.ca>) whenever you contact me. Email from a non-uwo.ca address will not be answered.

Email to the instructor's accounts must have exactly: **Chem 2213a** in the subject line

Email should only be used for administrative purposes; I will respond to legitimate concerns as quickly as possible. Emails of the following nature will receive **no** response:

- Questions about course material or how to do a particular problem. Such questions should be taken to the Resource Room, Blackboard Collaborate or discussed after lecture.
- Questions that can be answered based on the information found in this course outline or within the academic calendar.
- Requests for grade increases, extra assignments, make-up labs, etc.

## Course Materials

The following materials are available at the Western BookStore in the UCC. We will utilize all items.

### Required course materials:

1) ***Organic Chemistry for Life Sciences Chemistry 2213A Lab Manual + Suppl 2018-2019***

SKU: 9781533905857

Students repeating the course must repeat the labs.

2) ***Intro To Organic Chemistry/Ssm/Wileyplus/Orion Pkg***

SKU: 9781119328216

Author: Brown/Poon Publisher: Wiley, Edition: 6th

\*Contains full access to entire e-book, e-solutions manual and WileyPlus/Orion

3) **iClicker (Free as Western Student. Details on OWL)**

4) Optional but highly recommended materials:

- Molecular Model Kit, for example the Flex Molecular Visions Model kit by Darling from first-year chemistry.
- SKU: 0964883716

### Accessibility

Please contact the course instructor if you require material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Student Accessibility Services, Student Accessibility Services

Lectures may not be recorded in any format without prior explicit consent of the instructor.

## Student Development Centre

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

## Support Services

Students who are in emotional/mental distress should refer to Health and Wellness @Western <http://www.uwo.ca/uwocom/mentalhealth/> for a complete list of options about how to obtain help.

Outline of Course Topics and approximate timing, including in-class tutorials.

Topic	Description	Text Sections	Classes
0a	Structure and Bonding (review of 1 <sup>st</sup> year; self-study sections)	1.1 – 1.7	2
0b	Anatomy of an Organic Molecule and Organic Nomenclature (self study-See lesson Nomenclature)	various	0
1	Acid-Base Reactions (some material from 1 <sup>st</sup> year)	2.1 – 2.6	2
2	Fundamentals of Organic Structure (primarily from 1 <sup>st</sup> year) <ul style="list-style-type: none"> <li>• Alkanes, Cycloalkanes, Alkenes, Alkynes</li> <li>• Isomerism and Stereochemistry</li> </ul>	3.1 – 3.7 4.1 – 4.2, 4.4 6.1 – 6.10	6
3	Alkene Reactions	5.1 – 5.8	5
4	Arenes	9.1 – 9.8	3
<b>MIDTERM TEST October 20</b>			
5	Haloalkanes	7.1 – 7.9	3
6	Alcohols	8.1 – 8.6	2
7	Amines	10.1 – 10.7	1
8	Structure Elucidation: IR, <sup>13</sup> C-NMR, <sup>1</sup> H-NMR	11.1 – 11.13	4
9	Aldehydes and Ketones	12.1 – 12.10	5
10	Carboxylic Acids and Derivatives	13.1 – 13.8 14.1-14.8	3
<b>Final Exam during the December exam period.</b>			

The cutoff for material to be included on the midterm test will be announced as the date approaches but expect for it to cover the topics 0a-4 (ca. 16-18 lecture hours) plus laboratories. The final exam is cumulative.

## Evaluation

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

Component	Notes	% of total grade
Midterm Test	Saturday, Oct. 20, 7:30 pm start time	30
Final Exam	TBA by the Registrar	50
Laboratory	Five experiments (3.00 each)	15
iClicker	75% Participation required less than 75% participation	5 0
"Orgo-Connect" Social Media/Peer Engagement	Optional participation. Top 5 submissions every week have coffee with the Prof (Let's call it: Proffeine)- <b>details in class</b>	Bonus 2% *note: no grade over 100 can be submitted

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

To obtain credit for the course, it is necessary to obtain a minimum of 40 points (out of a possible 80) on the test components *and* a minimum of 7.50 out of 15.00 on the laboratory component. The latter is calculated from all five experiments. ***Failure to meet these criteria for passing will result in a course grade of 45% (or lower) being assessed.***

A missed experiment is assigned a grade of zero unless the reason for the absence is excused by an Academic Counselor (see Missed Course Components). Students who miss three or more experiments, whether excused or not, will not be given course credit and will be assigned a grade of no higher than 40%.

All labs, the midterm test, the final exam and online prelab exercise count; none of the components will be "dropped." Re-weighting of any component will only be done under the circumstances listed below for missed course components.

## Laboratory Information and 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-designated add/drop period.

Note, there is no “lab orientation” your first time at the lab will be for Experiment 1, so it is your responsibility to come prepared and in appropriate attire. Read the entire introduction section of the lab manual, as well Experiment 1, before your first lab. Viewing of the laboratory safety and dress code videos (found in OWL resources) prior to the first lab is also mandatory.

**There are also pre-lab technique videos on OWL and online prelab quizzes that must be completed before each laboratory. The Pre-lab quizzes are worth 20% of each laboratory and cannot be taken until the videos are viewed. Each laboratory section has its own OWL site.**

Lab-related enquires should be directed to the Chem 2213a Laboratory Coordinator:

- Sandra Zakaria Holtslag      MSA 1235 (next to year-1 lab)      szakaria@uwo.ca

If you miss a lab due to your inability to follow the schedule, you will receive a zero for that lab.

**Please note that there is a break in the schedule due to the Fall study break.**

<b>Experiment</b>	<b>Odd-Numbered Lab Sections</b>	<b>Even-Numbered Lab Sections</b>
1. Synthesis, Recrystallization and Determination of Melting Point	Week of September 17	Week of September 24
2. Separation of a Three Component Mixture by Extraction	Week of October 1	Week of October 15
3. Synthesis of Cyclohexene and Tests for C=C Bonds	Week of October 22	Week of October 29
4. Preparation and Tests for Reactivity of Alkyl Halides	Week of November 5	Week of November 12
5. Tests for Carbonyl Compounds and Spectroscopy	Week of November 19	Week of November 26

## Resource Room Schedule

Chem 2213a operates a Resource Room, located in the atrium of the Materials Science Addition (MSA 1205) on floor 1 (accessed from the chemistry building) for those who wish to seek assistance with course material. There is no cost, and the setting is very informal. Simply drop in anytime during the hours listed on OWL.

## Missed Course Components

If you are unable to meet a course requirement due to medical/health issues (physical or mental) or other serious circumstances, you must provide valid medical or supporting documentation to the Academic Counselling Office of your home faculty as soon as possible. No excuses are required for

iClicker participation. This is included in the 75% requirement for participation. (i.e., you can miss 25% of the classes, but why would you?)

If you are a science student, the Academic Counselling Office of the Faculty of Science is located in the North Campus Building (NCB), and can be contacted at 519-661-3040 or scibmsac@uwo.ca. Their website is [http://www.uwo.ca/sci/undergrad/academic\\_counselling/index.html](http://www.uwo.ca/sci/undergrad/academic_counselling/index.html). If you are not a science student then please see the Academic Counselling of your own Faculty.

For further information, please consult the university's medical illness policy at [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_illness.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf)

## Missed Labs

**There are no make-up labs, and it is not possible to reschedule them.** If you miss a lab for any reason, you will be assigned a mark of zero for that lab. No grade will be given for the pre-lab exercises in these cases. If the missed lab is due to a reason that is approved by your faculty's Academic Counselling Office, you will be excused from that lab and the weight of the missed lab will be shifted onto all of the other labs. **You must complete a minimum of 3/5 labs to pass the course, excused or not.**

**You must, within one week of the absence, submit documentation to your faculty's Academic Counselling Office.**

Chem 2213a entrusts your faculty's Academic Counselling Office with the task of assessing your circumstances and deciding whether academic accommodation is warranted. Thus, the email from your faculty's Academic Counselling Office must explicitly state that they recommend the granting of academic accommodation.

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, without the pre-lab quiz complete, or possess an old lab report or report with pre-filled observations. Students are deemed late if they arrive after the lab doors have closed. Laboratory Staff and Teaching Assistants have the right to eject students from the lab.

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.

## Missed Midterm Test or Final Exam

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

If you miss the Final Exam, contact your faculty's Academic Counselling Office as soon as possible. They will assess your eligibility to write the Special Exam in January 2018.

Anyone missing the midterm for a university sponsored/acknowledged event or sporting event must see their faculty's Academic Counselling Office or office of the Manager of Intercollegiate Athletics immediately.

Students seeking academic accommodations based on medical (physical or mental) health issues should begin by contacting the Academic Counselors of their home faculty. Please visit the following link for policy on Accommodation for Illness: [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_illness.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf)

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. If you study in a group, it is recommended that you do not sit in proximity to each other during testing if you believe that you'll give the same pattern of answers. Before testing begins, you have the opportunity to be reseated.

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

## Equal Opportunity and Evaluation Policy

The University is committed to academic integrity and has high ethical standards. All students will be treated equally and evaluated strictly using the criteria presented in this course outline and their respective weights. The evaluation is based solely on actual achievement; arguments based on effort, attendance, or personal issues (finance, relationships, etc.) are not entertained.

There is no extra work available for extra credit or to "make up" another grade; we do not offer any extra assignments, essays, experiments, or other work of any kind to any student.

## How to Achieve Your Goals in Chem 2213a

### 1. **Attend class!**

Be attentive, participate and think (about organic chemistry). Plus there is an easy 5% for iClicker participation that you get for 75% participation.

### 2. **Stay on top of the material. (Read and Write)**

Organic chemistry is cumulative. Concepts build on top of previously learned concepts. Former Chem 2213a students have noted the importance staying on top of the material to perform well in the course. There is a significant curriculum associated with this course, and the pace requires that you keep up-to-date with the material.

### 3. **Learn and understand the course material – don't just memorize it. (Practice!)**

Try reading ahead before lectures, especially when told to by your instructor. Watch the online material provided. Definitely do the end of chapter problems from text and those provided in the lessons on line- many of the exam questions are based on these types of problems. As practice for midterms/exam do the supplementary problems in the laboratory manual.

### 4. **Focus on making connections. (Think! You can DO IT!)**

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?

### 5. **Learn from the textbook and supplemental questions. (Use Resources)**

When working on questions from the textbook or supplemental problems your objective should be to focus on the concepts, the approach, the thought process, how to arrive at the correct answer and understand why it's the answer.

### 6. **If you have questions about the course material, address them promptly.**

Ask questions as soon as they arise, don't be afraid to engage your instructor, and take advantage of the Resource Room and BlackBoard Collaborate on OWL, don't wait until pre-midterm or pre-exam.