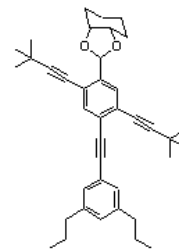


## Organic Chemistry II (CHMB42) – Winter 2023 University of Toronto Scarborough



Welcome to CHMB42! Organic chemistry is my passion – it's what got me hooked on studying chemistry back when I was in my second year of undergraduate studies. I know that this subject can be intimidating for some, and yes, it is going to require some hard work on your part. But, I hope to make it worth your while by exposing you to some of the exciting aspects of this diverse field and by helping you see its connections to your everyday lives. Before we get started, please take a few minutes to read through this document. It contains important information which will help ensure your success.

### ***Instructor (Labs and Lectures):***

Dr. Effie Sauer

Email: [effie.sauer@utoronto.ca](mailto:effie.sauer@utoronto.ca)

### ***Office Hours:***

Mondays 12:30-2:00 pm in EV554

Wednesdays 12:30-2:00 pm on ZOOM (see Quercus for link)

Office hours are a chance to meet with me, Dr. Sauer, and ask any questions you may have about the course material – or about chemistry in general!

### ***Lectures Schedule, LEC01 Section:***

Mondays 10:10 am – 11:00 am, SW319

Thursdays 9:10 am – 10:00 am, SW319

Fridays 2:10 pm – 3:00 pm, SW319

### ***Lectures Schedule, LEC02 Section:***

Recordings of the live LEC01 sections will be posted for viewing through Quercus. Course videos and materials belong to the instructor and the University and are protected by copyright. Do not download, copy, or share any course or student materials or videos without the explicit permission of the instructor.

### ***Text:***

We will be using Top Hat to access the digital textbook: *Organic Chemistry: Mechanistic Patterns*, 2<sup>nd</sup> Edition by William Ogilvie et al. If you already have a Top Hat account from another course, go to <https://app.tophat.com/e/870990> to be taken directly to this course's digital textbook. If you are new to Top Hat, go to <https://app.tophat.com/register/student>; search for this course's digital textbook with the join code **870990** and follow the prompts.

### ***Email Policy:***

Please do not send questions about course content to Dr. Sauer by email; these should be asked during office hours OR directed to the course discussion platform, Piazza (see below). Email should be reserved for times when personal information needs to be shared (**your**

circumstances, *your* grades, etc.). Please send these emails using a *utoronto.ca* email address to avoid having your message filtered out as spam.

### ***Discussion Board:***

This course will be using Piazza for class discussion. The Piazza system is designed to get you help fast and efficiently from classmates, the TAs, and myself. Rather than emailing questions to the teaching team, I encourage you to post your questions on Piazza. You can find the class signup link in the main Quercus menu.

### ***Tutorials:***

This course has weekly, one-hour tutorials which begin the week of January 16<sup>th</sup>. Students will work in small groups to complete problem sets. In some weeks, the problems sets will be graded and counted toward your tutorial mark; in other weeks, the group problem sets will be for practice only, and the tutorial grade will come from a short quiz written in the last 10 minutes of the tutorial. See Quercus for a detailed schedule showing what content you are responsible for each tutorial. Note that each of the 11 tutorials counts for 0.5% of your final grade with the lowest three grades being dropped (total course weight: 4%)

### ***Labs:***

Students are required to attend a four-hour lab every other week. There are five lab experiments in total, worth a combined 25% of your final course grade. The laboratory component of CHMB42 is compulsory, and, ***in order to pass the course, you must also pass the lab component.*** Your schedule is determined by your practical number. Odd numbered practicals (e.g. PRA001, PRA003) will start the week of January 16<sup>th</sup>; even numbered practicals (e.g. PRA002, PRA004) will start the week of January 23<sup>rd</sup>.

### **Required Items for the Lab:**

Students must purchase a lab manual from the UTSC bookstore before their first lab. Manuals from past semesters may not be used. In addition to the lab manual, students will also need a hard-cover notebook, a lab coat and safety goggles. Details on these items, as well as important instructions on preparing for your first lab period can be found in the introductory pages of your lab manual. Make sure you read them before your first lab!

### **Online WHMIS Videos and Safety Quiz:**

Before arriving to your first lab period, you are required to watch a series of WHMIS laboratory safety videos and complete an online safety quiz. These are found on your Quercus dashboard, listed as: UTSC 20231 Chemistry Lab Safety WHMIS training. Follow the instructions presented there. You must achieve a score of 80% or better on the quiz to be allowed to enter the lab. Your TAs will be checking your score on the quiz when you arrive on your first lab day; Please be prepared to show them your quiz results either on your phone or as a printed hard copy. NOTE: The date on the quiz must be from this term (January 2023); even if you've taken the quiz in a previous semester, it must be repeated for the current semester.

### ***Lab Skills Seminars:***

To help you prepare for your labs, there will be a 30-minute seminar offered the week before the start of each new experiment. Dates, times and locations will be announced on Quercus the first week of classes.

### ***Term Tests:***

There will be two, 90-minute term tests written outside of class time. The exact date, time, location and material to be tested will be announced as soon as the tests are scheduled by the registrar's office. Note that the second term test will be cumulative and will include some material from the first term test.

### ***Final Examination:***

There will be a 3-hour, cumulative exam written during the end of semester exam period. The exam will cover both lab and lecture material. The exact date, time and location will be announced as soon as they are available.

### ***Course Engagement Grade:***

To help keep everyone motivated in the course, there is a 2% grade for course engagement. There are four ways of earning credit towards this 2%:

- Attend at least 75% of the lectures
- Regularly post and/or answer questions on Piazza (average 2 posts/replies per week)
- Complete at least 75% of the assigned TopHat textbook questions
- Complete at least 75% of the weekly post-lecture quizzes with an average grade of at least 75%)

Each of the above activities is worth 1%; pick any two to earn the full 2%.

### ***Weekly Post-Lecture Quizzes (Optional):***

At the end of each week, there will be a short online quiz based on the previous weeks' lecture material. The questions are intended to test your **basic** understanding of the lecture material before you proceed to the more in-depth problem solving needed for the textbook problems, tutorial problems and exam questions. Unless otherwise announced, review quizzes will close **Sundays at 11:59 pm**. Note that these quizzes are not for credit, but their completion can be used towards the course engagement grade (see above).

### ***Method of Evaluation:***

| <b>Graded Work</b> | <b>Value</b> |
|--------------------|--------------|
| Laboratory         | 25%          |
| Term test 1        | 14%          |
| Term test 2        | 20%          |
| Tutorials          | 4%           |
| Course engagement  | 2%           |
| Final exam         | 35%          |
| <b>TOTAL</b>       | <b>100%</b>  |

Note: To pass the course, you must meet **ALL** of the following criteria:

- 1) Earn a passing grade in the course overall (> 50%)
- 2) Complete at least 4 of the 5 lab experiments
- 3) Pass the lab portion of the course
- 4) Pass both term tests **OR** pass the final exam

If you earn a passing grade in the course overall, but fail to meet one or more of the above criteria, your final grade will be lowered to 49%.

### Course Schedule (Tentative):

| Week of                  | Lecture  | Tutorial            | Labs   |
|--------------------------|--|---------------------|--|
| Jan. 9 <sup>th</sup>     | Chapter 9: Conjugation & Aromaticity                         | ----                | ----   |
| Jan. 16 <sup>th</sup>    | Chapter 10: Electrophilic Aromatic Substitution              | Chapter 9           | Exp't 1 (odd # PRAs)<br>Reduction of Benzil; TLC     |
| Jan. 23 <sup>rd</sup>    | Chapter 10 cont.   | Chapter 10 (part 1) | Exp't 1 (even # PRAs)<br>Reduction of Benzil; TLC    |
| Jan. 30 <sup>th</sup>    | Chapter 12: Formation of Pi Bonds (eliminations, oxidations) | Chapter 10 (part 2) | Exp't 2 (odd # PRAs)<br>Friedel-Crafts Alkylation    |
| Feb. 6 <sup>th</sup>     | Chapter 13: NMR Spectroscopy                                 | Chapter 12          | Exp't 2 (even # PRAs)<br>Friedel-Crafts Alkylation   |
| Feb. 13 <sup>th</sup>    | Chapter 13 Cont.   | Chapter 13 (part 1) | Exp't 3 (odd # PRAs)<br>Oxidation with Oxone         |
| --- Reading Week ---     |  |                     |  |
| Feb. 27 <sup>th</sup>    | Chapter 14: MS and IR Spectroscopy                           | Chapter 13 (part 2) | Exp't 3 (even # PRAs)<br>Oxidation with Oxone        |
| March 6 <sup>th</sup>    | Chapter 15: Carboxylic acid Derivatives and their Reactions  | Chapter 14          | Exp't 4 (odd # PRAs)<br>Spectroscopy of Unknowns     |
| March 13 <sup>th</sup>   | Chapter 15 Cont.   | Chapter 15 (part 1) | Exp't 4 (even # PRAs)<br>Spectroscopy of Unknowns    |
| March 20 <sup>th</sup>   | Chapter 16: Acetals and Related Compounds                    | Chapter 15 (part 2) | Exp't 5 (odd # PRAs)<br>Synthesis of Propyl Acetate  |
| March 27 <sup>th</sup>   | Chapter 17: Carbonyl-Based Nucleophiles                      | Chapter 16          | Exp't 5 (even # PRAs)<br>Synthesis of Propyl Acetate |
| April 3 <sup>rd*</sup>   | Chapter 17 Cont.   | Chapter 17 (part 1) | ----   |
| April 10 <sup>th**</sup> | Chapter 18: $\alpha,\beta$ -Unsaturated Electrophiles        | ----                | ----   |

\*No Friday lecture; \*\*Monday Lecture only

### Policy on Missed Tutorials:

If a student misses a tutorial for any reason, the missing grade will count as one of the three lowest grades that is automatically dropped from the final tutorial grade. These **missed tutorials do NOT need to be brought to the attention of Dr. Sauer**. If a student has an ongoing conflict with their tutorial section causing them to miss more than 3 tutorials, they should reach out to Dr. Sauer directly to discuss possible accommodations.

### Policy on Missed Labs and Term Tests:

If you need to miss a laboratory period or term test for any legitimate reason, the following steps are to be taken:

1. Self-declare your absence on ACORN.
2. Take a screen capture of your declared absence.
3. Contact Dr. Sauer by email ([effie.sauer@utoronto.ca](mailto:effie.sauer@utoronto.ca)) with the details of your absence, including the screen capture of your self-declared absence. This should be done as soon as possible. If you have missed a lab, be sure to include your PRA number.

Once your absence has been validated, accommodations will be made for the missing grades. For missed term tests, students will be given the choice of either writing a make-up test, or

moving the weight of the missed test to the final exam. For missed labs, every effort will be made to schedule a make-up lab. If this is not possible (due to space or scheduling restrictions), the missing lab grades will be redistributed over the remaining lab grades.

**If no explanation for your absence is provided, a grade of zero will be assigned.**

***Ancillary Fees:***

The Department of Physical and Environmental Sciences at UTSC provides state-of-the-art education in chemistry. Chemistry being an experimental science makes learning in a laboratory setting critical. In order to provide the latest technology to enhance the student learning experience, UTSC will be charging ancillary fees for all chemistry courses that have a laboratory component. These fees are used to recover the cost of materials and services used during the lab and to maintain and upgrade the equipment used by students. For more information regarding ancillary fees, students are encouraged to visit the following website: <https://planningandbudget.utoronto.ca/tuition-ancillary-fees/ancillary-fees/>

***Academic Integrity:***

The University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences.

Potential offences in papers and assignments include using someone else's ideas or words without appropriate acknowledgement, submitting your own work in more than one course without the permission of the instructor, making up sources or facts, obtaining or providing unauthorized assistance on any assignment. On tests and exams cheating includes using or possessing unauthorized aids, looking at someone else's answers during an exam or test, misrepresenting your identity, or falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

***Accessibility:***

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to help you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff (located in AA142) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or [ability@utsc.utoronto.ca](mailto:ability@utsc.utoronto.ca). Please note that their services are in high demand; you are encouraged to approach them early in the semester to ensure that any accommodation you may need will be in place in time.

***Equity, Diversity and Inclusion:***

The University of Toronto is committed to equity, human rights and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another's differences. U of T does not condone discrimination or harassment against any persons or communities.