



## Organic Chemistry II (CHMB42H3)

Summer 2013

University of Toronto at Scarborough

**Welcome to Organic Chemistry Part II!** Organic Chemistry is a vitally important science that deals with the structure, properties, and reactions of compounds that contain carbon. You are about to continue your exciting journey in the wonderful world of organic chemistry. This journey will be enjoyable and stimulating by showing you how organic chemistry is integral to daily life. In this journey, you will gain a deeper understanding of spectral techniques, aromaticity, chemistry of carbonyl compounds, oxidation and reduction reactions, chemistry of amines, pericyclic reactions and I will give you an introduction to drug discovery and design.

### ***Instructor:***

Nirusha Thavarajah, HBSoc., Ph.D., LL.M.

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Office Hours: Mondays 11:10 am-12:00 noon at PO104- RM109, 12:00 noon-1:30 pm SW 153

Wednesdays 10:00 am-12:15 pm at PO 104-RM109

Virtual Office Hours: Thursdays 9:45 pm-10:45 pm

***Email Policy:*** Please use a valid “utoronto.ca” or “utsc.utoronto.ca” account for all CHMB42H3 correspondence. If you use other accounts, it may be filtered out as spam and may not be received.

### ***Text Book:***

P.Y. Bruce, Organic Chemistry, 6<sup>th</sup> ed., Pearson.

P.Y. Bruce, *Study Guide and Solutions to Organic Chemistry*, 6<sup>th</sup> ed., Pearson

***Lectures:*** Mondays 9:00-11:00 am, Wednesdays 12:30-2:00 pm in SW 309

Fundamental contents of the course will be presented and elucidated in lectures. ***Please make every effort to attend all CHMB42H3 lectures!***

***Course Website:*** Lecture materials (including videotaped lectures), Laboratory materials, grades, and class announcements are posted on the CHMB42H3 Blackboard web space.

To login, go to: <https://portal.utoronto.ca/webapps/portal/frameset.jsp>. Click on “log-in to the portal” at the top left. Login using your UTORid username and password (same as what’s used for your UTOEmail). Under the “My Courses” box (top right), click on the CHMB42H3 link.

### ***Recommended Websites:***

a) Virtual Textbook of Organic Chemistry:

<http://www.cem.msu.edu/~reusch/VirtualText/intro1.htm>

b) Interactive Tutorials:

<http://www.cem.msu.edu/~reusch/VirtualText/Questions/problems.htm>

**Announcements:** Official announcements regarding test locations, material covered for each test and other important announcements will be posted on the CHMB42H3 course web site. It is absolutely your responsibility to check these postings regularly for important announcements.

**Accessibility:** Students with diverse learning styles and needs are welcome in this course. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact us and or the Accessibility Services as soon as possible: SW 302, (416) 287-7560 or ability@utsc.utoronto.ca

**Assessment and Grading Practices:**

| Methods of Evaluation | Contribution to Final Grade (%) |
|-----------------------|---------------------------------|
| Laboratory            | 25                              |
| Tutorial Quizzes      | 2                               |
| Online Home Work      | 3                               |
| Midterm Test          | 25                              |
| Final Exam            | 45                              |
| Total                 | 100                             |

**\*\* Note:** To pass the course, you must also pass the laboratory component of the course.

**Midterm:** The midterm exam will be written outside of class time just before or just after the reading week. The exact date, time and location will be announced as soon as they are available. If you miss the midterm due to a legitimate reason, you must submit the appropriate documentation within one week of your absence. If the reason is medical, an official UTSC medical form should be completed by your physician. ([http://www.utsc.utoronto.ca/~registrar/resources/pdf\\_general/UTSCmedicalcertificate.pdf](http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf)). Students with validated absence will be permitted to write a make-up midterm and those without a validated absence will receive a grade of zero for the missed midterm.

**Final Exam:** There is a 3-hour *cumulative exam* during the exam period. The date, time and location will be announced as soon as they are available. **Please note that if you miss the Final Exam, you must petition the Registrar's Office to write a make-up exam in the next formal exam period.** Check the UTSC Calendar for instructions and deadlines.

**Mastering Chemistry Homework Assignments:** There will be weekly online homework assignments which you will have to complete through the online program "Mastering Chemistry". Assignments will be made available Friday at 12:00 noon and will be due the following Friday at 12:00 noon.

*Registration instructions if you already have an active account:*

Go to: <http://www.masteringchem.com/>.

- Enter your "login Name" and "Password".

- You will now be prompted for the new course ID. Enter **THAVACHMB42H3**.
- This will take you into the Mastering Chemistry program for this course.

*Registration instructions if you don't have an account:*

Go to: <http://www.masteringchem.com/>

- Under the section for "Register" click on the "Students" button.
- Select "Yes I have an access code" and click "continue"
- Click "I accept" to the License Agreement and Privacy Policy
- Select "No" to indicate that you do not have an account and set up your login and password.
- Enter your Access Code (comes with your textbook package) in the field provided.
- Complete the requested account information page. **To ensure that you receive credit for your work, make sure that the name you enter is the same as the name on file with ROSI.** Under School Name, select University of Toronto - Scarborough.
- Click on Login Now and follow the instructions above to enroll in the Mastering Chemistry account for this course.

***Tutorials:*** Tutorials will alternate with the lab schedule. You will be assigned a tutorial section based on your lab section number. ***Assigned tutorial numbers will be posted on Blackboard.*** Throughout the term, questions that can help you to assess and improve your understanding of the course material will be posted on Blackboard under course materials. Most - though not all - of these questions will be selected from the end of each chapter of the textbook. Do the questions for your next tutorial class. Your teaching assistant (TA) will answer any questions that you may have concerning the assigned exercises and assist you in understanding the important concepts of the course material. At the tutorial classes, you will write 10-minute quizzes that count for credit towards your final mark. The quiz questions will be very closely based upon the assigned questions.

*Even numbered tutorial sections: Your tutorial will be on Monday May 13<sup>th</sup>, 12-1 pm*

*Odd numbered tutorial sections: Your tutorial will be on Monday May 27<sup>th</sup>, 12-1 pm*

***Laboratories:*** Arrive fully prepared! You will attend your first laboratory class on the date indicated below, according to the P-section that you are assigned. **Check Blackboard for your assigned P-section code.**

*Odd numbered practical's: Your first lab will be on Monday May 13<sup>th</sup>, 12-4 pm*

*Even numbered practical's: Your first lab will be on Monday May 27<sup>th</sup>, 12-4 pm*

***Footwear in lab classes:*** for safety reasons, students wearing open-toed shoes will not be permitted to work in the lab.

It will not be possible to reschedule an experiment missed because of inappropriate footwear; a mark of zero will be awarded for the missed experiment. On the day of your first lab a class list with P-section code will be posted outside of SW 153. Laboratory manual is posted under the CHMB42H3 laboratories section. It will be impossible to perform the experiments without a copy of the lab manual.

You must bring with you the following items to every laboratory class:

- Printed lab manual (\*\* Laptops are not allowed on lab desks)
- A lab notebook (must be a hard-covered, bound notebook)
- Indirectly vented chemical splash goggles
- A lab coat, a pair of rubber gloves, and a supply of paper towels or 'J-cloths'.

**Ancillary Fees:** UTSC will be charging ancillary fees for all chemistry courses that have a laboratory component. Those fees are used to recover the cost of chemicals and other lab materials (e.g. filter paper, disposable pipettes, etc.) consumed over the course of each lab. To view a complete list of those fees, students are encouraged to visit the following link: <http://www.planningandbudget.utoronto.ca/Assets/Academic+Operations+Digital+Assets/Planning+26+Budget/2012-13+Category+5+Ancillary+Fees.pdf>

### ***Interactive Learning in Organic Chemistry II***

- Clickers:** I will be using clicker type questions throughout the term. I strongly encourage you to bring your clickers for all lectures. There are no grades attached to clicker type questions.
- Discussion Board:** Discussion board will be maintained on Blackboard to answer questions related to course materials. The forum will be maintained by the course instructor to ensure all questions are answered correctly. *Please note: Solutions to Mastering Chemistry Homework Assignments are not permitted.*
- Surveys:** Course survey will be maintained on Blackboard to gather student feed backs and comments on the course materials to guide future instructions.
- Journal:** This is a self-reflective tool for the students. It allows students and the instructor to add comments. Journals can be made public so all enrolled users can read all entries made to the Journal topic.
- A Peer Facilitator Program:** Facilitated Study Group (FSG) is being run through the Centre for Teaching and Learning. These weekly sessions are open to all students taking this course who want to improve their understanding of course material, improve their study techniques, and improve their grade. Attendance is voluntary. In these sessions you will compare notes, discuss important concepts, develop study strategies, and prepare for exams and assignments on course material. Course material is NOT re-lectured. The FSG's are led by a trained facilitator who has previously taken the course. A survey will be taken during the first week of class to determine the best days and times for most students, and they will begin probably the 2nd or 3rd week of class.
- Virtual Office Hours:** I will be holding virtual office hours on Thursdays 9:45-10:45 pm (Please Check the Blackboard for Instructions).

**Absence:** If you miss a significant period of class work through illness or a related reason, you should request consideration by submitting a completed University of Toronto Student Medical Certificate which is available on the following website:

([http://www.utsc.utoronto.ca/~registrar/resources/pdf\\_general/UTSCmedicalcertificate.pdf](http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf)).

The document must be presented within one week of the date of absence. Only serious illness (or equivalent reasons) will be accepted as justification for absence (note: the U of T Medical Certificate, filled out by your doctor, stating that you saw him/her on a given day is not adequate. Your doctor must certify that *you were too sick to attend the test*, etc.). The form of consideration extended for a particular item of missed term work will be explained to you when you submit the certificate. If you miss a lab, follow the procedure outlined in the CHMB42H3 lab manual (page Intl-1).

### ***Academic Integrity:***

Academic integrity is one of the cornerstones of the University of Toronto. It is critically important both to maintain our community which honours the values of honesty, trust, respect, fairness and responsibility and to protect you, the students within this community, and the value of the degree towards which you are all working so diligently.

According to Section B of the University of Toronto's Code of Behaviour on Academic Matters <http://www.governingcouncil.utoronto.ca/policies/behaveac.htm> which all students are expected to know and respect, it is an offence for students to:

- To use someone else's ideas or words in their own work without acknowledging that those ideas/words are not their own with a citation and quotation marks, i.e. to commit plagiarism.
- To include false, misleading or concocted citations in their work.
- To obtain unauthorized assistance on any assignment.
- To provide unauthorized assistance to another student. This includes showing another student completed work.
- To submit their own work for credit in more than one course without the permission of the instructor.
- To falsify or alter any documentation required by the University. This includes, but is not limited to, doctor's notes.
- To use or possess an unauthorized aid in any test or exam.

There are other offences covered under the Code, but these are by far the most common. Please respect these rules and the values which they protect. Offences against academic integrity will be dealt with according to the procedures outlined in the Code of Behaviour on Academic Matters.

**CHMB42H3 Lecture Schedule (\*Tentative)**

| Dates   | Lecture Topic  | Reading (Bruice 6 <sup>th</sup> ed.) | Reading (Bruice 5 <sup>th</sup> ed.) |
|---|--|--------------------------------------|--------------------------------------|
| May 6 <sup>th</sup> , 8 <sup>th</sup>         | Mass and IR spectroscopy   | Ch 13                                | Ch 12                                |
| May 13 <sup>th</sup> , 15 <sup>th</sup>       | IR and NMR spectroscopy  | Ch 13 and 14                         | Ch 12 and 13                         |
| <b>May 20<sup>th</sup></b>                    | <b>Victoria Day-University Closed</b>                                      | -                                    | -                                    |
| May 22 <sup>nd</sup>                          | Aromaticity. Reactions of Benzene  | Ch 15                                | Ch 14                                |
| May 27 <sup>th</sup> , 29 <sup>th</sup>       | Aromaticity. Reactions of Benzene  | Ch 15                                | Ch 14                                |
| June 3 <sup>rd</sup> , 5 <sup>th</sup>        | Reactions of Substituted Benzenes  | Ch 16                                | Ch 15                                |
| June 10 <sup>th</sup> , 12 <sup>nd</sup>      | Carbonyl Compounds I   | Ch 17                                | Ch 16                                |
| June 17 <sup>th</sup>                         | Carbonyl Compounds I/Midterm Review  | Ch 17                                | Ch 16                                |
| <b>June 18<sup>th</sup> -22<sup>nd</sup></b>  | <b>Reading Week No classes</b>   | -                                    | -                                    |
| June 24 <sup>th</sup> , 26 <sup>th</sup>      | Carbonyl Compounds II  | Ch 18                                | Ch 17                                |
| <b>July 1<sup>st</sup></b>                    | <b>Canada Day – University Closed</b>                                      | -                                    | -                                    |
| July 3 <sup>rd</sup>                          | Carbonyl Compounds III   | Ch 19                                | Ch 18                                |
| July 8 <sup>th</sup> , 10 <sup>th</sup>       | Carbonyl Compounds III   | Ch 19                                | Ch 18                                |
| July 15 <sup>th</sup> , 17 <sup>th</sup>      | More About Oxidation-Reduction Reactions                                   | Ch 20                                | Ch19                                 |
| July 22 <sup>nd</sup> , 24 <sup>th</sup>      | More About Amines<br>Heterocyclic Compounds                                | Ch 21                                | Ch 20                                |
| July 29 <sup>th</sup> , 31 <sup>st</sup>      | Carbohydrates, Introduction to drug discovery and design/Final Exam Review | Ch 22                                | Ch 21                                |
| <b>August 5<sup>th</sup></b>                  | <b>Civic Holiday-University Closed</b>                                     | -                                    | -                                    |
| <b>August 8<sup>th</sup> -20<sup>th</sup></b> | <b>Final Exam Period</b>   | -                                    | -                                    |