

ORGANIC CHEMISTRY I

CHMB41H3

LECTURE OUTLINE

This document contains important course information and should be kept in a safe place where you can refer to it throughout the semester.

Welcome to CHMB41HS: Organic Chemistry I:

Welcome to CHMB41! Organic chemistry is an exciting subject with applications that are found all around us. This course is going to require some hard work, but I hope to make it worth your while by exposing you to some of the exciting aspects of this diverse field and relating the subject to your everyday lives. Please take a few minutes to read through this document. It contains important information which will help ensure you have all the tools you'll need to succeed in this course.

CHMB41 provides an introduction to the electronic structure, nomenclature, and bonding in organic compounds, and studies the mechanisms of various chemical transformations, such as substitution, elimination and radical reactions of several classes of organic compounds. The stereochemistry, or 3-dimensional arrangement of atoms in organic molecules, and various methods for stereochemical representation will also be discussed in detail.

This course includes a four hour laboratory every other week. It is a prerequisite for almost all other further chemistry and human biology and biochemistry courses at the University of Toronto at Scarborough campus. **Students enrolled in CHMB41H must have previously successfully completed CHMA10H and CHMA11H. If you do not have these prerequisites, it is imperative you see the instructor to discuss your situation; otherwise I cannot accept any responsibility for your performance and outcome in the course.**

Lectures:

Mon, Wed, Fri 8-9am AC 223 (ARC)

Classes start Tues Sept 4, 2018. Last day of classes will be Mon, Dec 3, 2018.

The lectures are videotaped and will be available for viewing on the course webpage, for a period of two weeks following each lecture.

Lecturer: Dr. Shadi Dalili (EV-562)

Lab Coordinator: Dr. Shadi Dalili (EV-107)

Email: sdalili@utsc.utoronto.ca

<u>Office Hours (in EV-562):</u>	Mondays	12-2pm
Starting Mon Sept 11th	Wednesdays	2-3 pm
	Thursdays	11:30-12:30

Course Website: CHMB41 maintains a Quercus web space which archives a variety of course-related information including: class announcements, lecture slides, extra resources, contact information and links to some useful outside resources. In addition, class emails will regularly be sent via Quercus. ***In order for you to receive these emails, you must have a valid "utoronto.ca" email account registered with ROSI/ACORN.***

To login, go to: <https://q.utoronto.ca> and login in with your UTORid. Click on the link for our course (CHMB41H LEC01 Fall 2018). The support site is <https://qinfo.utoronto.ca>

Discussion Board:

An online discussion board will be maintained through Quercus. This online space will provide you with a place to post and answer questions related to the course material. You may post anonymously, or as yourself. The forums will be monitored by me (and/or a teaching assistant) to ensure that all questions are answered accurately. The times during which the posts will be checked will be announced in class during the semester. In addition, frequently asked questions (with their answers) may also be posted here so be sure to check in periodically.

Please note: Posts which contain answers/solutions to weekly homework assignments are not permitted and will be removed promptly.

Learning Outcomes for Course: By the end of this course, students will be able to:

- a) Identify and name major classes of organic compounds
- b) Describe and distinguish between different types of bonding and their effect on physical properties of molecules
- c) Give examples of different types of nucleophiles and electrophiles and show electron movement in reactions using curved arrows
- d) Predict major and minor products of reactions based on reaction data and explain why/how they are formed
- e) Compare and contrast thermodynamic versus kinetic products and conditions for formation of each
- f) Classify reactions as substitution, elimination, addition, etc and choose/distinguish between factors and conditions that favor one type versus others
- g) Convert 2-dimensional chiral structures into 3-dimensions and determine *R* or *S* stereochemistry
- h) Distinguish between enantiomers, diastereomers, meso and other forms of isomers
- i) Anticipate and validate the stereochemical outcome of reactions involving stereocenters
- j) Propose and design syntheses of given compounds using retrosynthetic analysis

Textbook: Ogilvie's Organic Chemistry Mechanistic Patterns Textbook along with Mobius Online Homework system

There are 3 options available for purchase through the UTSC bookstore:

1. Ogilvie's Organic Chemistry Textbook with Mobius (24 month access) isbn# 9780176824730 - \$99.95
2. Ogilvie's Organic Chemistry Textbook with Mobius (24 month access) + Solutions Manual isbn# 9780176833367 - \$106.95
3. Mobius Printed Access Card (24 Months) for Ogilvie's Organic Chemistry isbn# 9780176702755 - \$79.95

Chapters: 1-8, 11

Recommended: Molecular Models

You are *strongly encouraged* to purchase a molecular model kit from the UTSC bookstore or other bookstores such as Indigo or Chapters. These will become an invaluable tool as the course progresses since several key topics require visualization and manipulations of compounds in three-dimensions.

In class Participation:

This semester we will be using the Top Hat (www.tophat.com) classroom response system in class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message.

You can visit the Top Hat Overview (<https://success.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide>) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

You can register by simply visiting our course website: <https://app.tophat.com/e/092549>

Note: our Course Join Code is: 092549

Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (support@tophat.com), the in app support button, or by calling 1-888-663-5491

Online Homework:

The online homework system is part of the Mobius platform. I will assign the homework questions at the end of each chapter as we progress through the text and due dates will be announced on Quercus and Mobius platform. These will be for extra practice and directly related to test and exam questions; thus, the more you do, the better prepared you will be for your midterms and final exam.

Laboratory Schedule:

Odd numbered labs Sections **PRA0001, PRA0003** etc. (**week 1 students**) begin labs week of **September 10th, 2018**, with the **FIRST** week 1 lab being held on **WEDNESDAY SEPT 12th**. **Even numbered** labs Sections **PRA0002, PRA0004** etc. (**week 2 students**) begin labs week of **September 17th, 2018**, with the **FIRST** week 2 lab being held **WEDNESDAY SEPT 19th**.

The full schedule of labs is posted in you lab manual, and it is imperative that you follow that schedule. If you miss a lab due to misreading the schedule or forgetting the day of your lab, NO MAKEUPS will be allowed.

The laboratory component of CHMB41H is compulsory. In order to pass the CHMB41H course, students must pass the lab component of the course.

Changes to lab sections: Any changes to your lab section can be made through ROSI/ACORN *up until 9am FRI Sept 7th*. After this date, the labs will be closed and no more changes can be made. IF you cannot make a lab section due to it being full, you have to find another student willing to switch days with you, as the maximum capacity in each lab section is 16 students. Lab sections can be changed after the deadline only by contacting the lab coordinator and providing proper documentation for the change (i.e. lab/course conflicts shown on timetable, etc)

Medical Notes:

If you are absent: report it to your TA by phone or e-mail. You may also leave a message with the Lab Coordinator Shadi Dalili in EV 107 or by phone 416-287-7215. Hand in your medical note in your next class or ASAP.

The medical note should:

- indicate clearly the degree of incapacitation on academic functioning; PLEASE NOTE THAT **ONLY THE**

FIRST 3 DEGREES (SEVERE, SERIOUS AND MODERATE) WILL BE ACCEPTED FOR RESCHEDULING OF MAKEUP LABS; MILD AND NEGLIGIBLE DEGREES WILL NOT BE ACCEPTABLE FOR LAB RESCHEDULING

- if possible, state the illness and
- it MUST have the practitioner's stamp with address and telephone number

Documentation should be provided *within 48 hours* so that a makeup lab can be scheduled, provided that room can be found in another lab section. *If no reason for your absence is made, a mark of zero will be given for that lab. Missed labs can only be made up **within 1 week** of the missed lab and if there are further conflicts or a student misses a makeup lab, no more makeup opportunities will be provided and there will be a mark of zero recorded for that lab.*

Laboratory Rules:

Please arrive *on time* for your labs and come *prepared*. The experiments are designed such that a *well-prepared* student can complete the experiment in the allotted time. If you haven't read over the procedure ahead of time and made sure that you understand each step, it will likely be difficult for you to finish your work on time. If you do not have the proper lab notebook writeup and preparation, you will not be allowed to perform the lab.

Lab Manual: The experiments, lab schedule, and appendix material for the lab will be provided electronically through Quercus under the "laboratory materials" section. Note, you may **not** use a lab manual from a previous year as many of the experiments are changed every year. It is imperative that you read and keep copies (either electronically or printed form) of all the sections of the lab manual, as the lab test and quizzes will cover material from all sections. You are responsible for printing the data sheets for each experiment to complete and hand in to your TA. Marks will be deducted for failing to bring your datasheets on the day of your lab.

Lab Safety Videos: Safety in the laboratory is an extremely important element in the chemistry program at this University. Failure to follow safe practices can cause laboratory accidents which may result in the loss of time, damage to clothing, and other property, and most importantly personal injury. By following suitable precautions, you can anticipate and prevent situations that would otherwise lead to accidents.

You will be required to complete the WHMIS online course accessible through the Quercus website using your UTORid. It will be different from the course you had to take for CHMA10H3 or CHMA11H3.

Instructions on how to access the course will be posted on the CHMB41H blackboard site.

All students registered for a lab section MUST watch the WHMIS training videos on Quercus and pass the quiz pertaining to the videos BEFORE being allowed to work in the labs. In order to access the WHMIS training video and quiz, follow the steps below:

1. Login to the Quercus portal using your UTORid and access the WHMIS course under "My Courses" in your Quercus portal
2. You will be expected to watch the video (approximately 30 minutes long). Once you have watched the video content, take the quiz. PLEASE NOTE YOU MUST OBTAIN AN 80% OR HIGHER ON THE QUIZ IN ORDER TO PASS IT
3. Email your completed quiz, with your name, student number and score (you can do a screenshot of your web page) to your lab TA AT LEAST 24 hours prior to your first lab period. Alternatively, you can print out your score on the quiz, with your student number and name on it, and bring to give to your TA on the first day of your lab; NOTE: IF YOU FAIL THE QUIZ OR FAILURE TO PROVIDE PROOF OF A PASS ON YOUR ONLINE SAFETY QUIZ MEANS YOU WILL NOT BE

ALLOWED TO DO ANY LABS UNTIL YOU PROVIDE PROOF OF YOUR PASS TO YOUR LAB TA

4. Any labs missed due to handing in the safety quiz data late CANNOT be made up and you will forfeit the marks/credit for those labs.
5. Students who have not completed the WHMIS safety course will not be allowed to participate in the lab.

Lab Coats: They are required. They may be purchased from EPSA or Chem Club or from the UTSC Bookstore.

Safety Glasses: Safety glasses must be worn at all times in the lab. Students who do wear glasses should purchase a pair of goggles which must be worn over their glasses at all times. **Contact lenses must not be worn in the laboratory. NO STUDENT WILL BE ALLOWED TO WORK IN THE LABORATORY UNLESS HE/SHE IS WEARING APPROVED EYE PROTECTION.**

Be punctual: The introductory explanations for the experiments and/or quizzes will begin at 10 minutes past the hour.

Be prepared: Each student will be expected to have a good knowledge of the assigned experiment **before** entering the laboratory. **It will be helpful to prepare a point-form pre-lab procedure before coming to the lab.**

Be present: Your term mark from the lab is worth a large percentage of your mark. It is based not only on the reports which you submit, but also on your ability to answer, with competence, the questions of the demonstrators and instructor.

- **PLEASE NOTE that students will not be allowed to re-schedule or miss labs on the days of any term test or exam. This is a Chemistry Discipline Policy.**

E-mail policy:

- Use UTSC account
- If Yahoo or Hotmail used follow instructions below to prevent email ending up in junk mail:
 - put CHMB41 in the subject line followed by the reason for the email
 - use a greeting of some kind - NOT "Hey"
 - sign your first and last name
 - please include your student number after your name
- Student emails will be replied to within 24 hours (M-F) provided that the above protocol is used.

A note on email content: Please do not email questions regarding the lecture material/assigned reading/suggested problems. These should be posted on the discussion board (see above) so that others can benefit from the responses provided. Questions on the lab material should be directed first to your TA. If you still do need to, you can contact the instructor for lab questions.

Extra Resources:

a) *Facilitated Study Groups*

In this course, we will be offering Facilitated Study Groups (FSGs) through CTL. Facilitated Study Groups (FSGs) are weekly study sessions open to all students taking CHMB41, and who want to improve their understanding of course material, improve their study techniques, and improve their grade. Attendance is voluntary. In FSGs you'll compare notes, discuss important concepts, develop study strategies, and prepare for exams and assignments on course material. Course material is NOT re-lectured. FSGs are lead by a trained facilitator who has previously taken the course. Research shows that students who attend FSGs regularly can achieve better grades. A survey will be taken during the first week of class to determine the best days and times for most students, and then the FSGs will start (probably the second or third week of class). Those days, times, and session locations will be announced in class, posted on our course page, and at <http://ctl.utoronto.ca/home/fsg/>. Attend as many sessions as you want!

b) *Lab Skills Seminar*

An optional seminar will be held each week during which the upcoming lab will be discussed. New techniques will be demonstrated, including a review of how to set up the relevant glassware or any other apparatus to be used. Background theory for the lab will be discussed, including a review of any relevant reaction mechanisms. The time(s) and location(s) for these seminars will be announced in class and posted on Quercus.

c) *Chem Aid Center*

TAs will be available in the ChemAid Center in EV 502 to tutor and help you with any questions on course material. The Chem Aid Center will be open starting the second week of classes, Mon-Thurs from 10am-12noon and 1-3pm. The main goal of the center is to provide you with extra help in course content, as well as a welcoming space for discussion and interaction between TAs, students, and professors.

Methods of Evaluation: The grading scheme for the course is shown in the table below:

Term Test 1*	17%	Early to mid-October
Term Test 2*	17%	Early to mid-November
Final Exam	35%	Entire course work
In-class Participation	3%	Tophat platform
Textbook readings and online homework	3%	Mobius platform
Laboratory**	25%	See lab manual online for dates/evaluation
Extra Credit Project	1-3%	Details to be announced in class

- * there may be a makeup for term test with appropriate documentation IF number of students necessitates- otherwise the percentage will be added to the final exam
- ** lab component must be passed in order to pass course; please note 5% of the lab is a written lab test included as part of the final exam

NOTE: In order to pass the course, you MUST pass the laboratory component and at least one of the midterm and final exam.

Online Grades:

Individual grades will be posted on Quercus as they become available. Please check these periodically to make sure that the posted grades match your own records. Any discrepancy should be reported immediately to the instructor or the lab coordinator, as appropriate.

Please note: In-class participation, text readings, online homework and the final exam marks WILL NOT be posted on Bb. These you can access through the gradebook of each respective website and the final exam grade you can calculate using the marks breakdown given in the syllabus.

No calculators, pagers, cell phones or other aids will be allowed during any quizzes, lecture tests or exams, unless announced previously. Molecular models may be used if you wish to do so.

Persons who miss a test or exam are expected to contact Dr. Dalili immediately. Documentation, which is the UTSC medical note, **must be given within one week** for approval. The same rules apply to medical notes for missed term work as for missed labs (see section on laboratories). If the documentation is insufficient, you may be required to obtain further, signed, paperwork. Those presenting a valid, documented reason for absence, in writing, within this time frame, will have the percentage of the missed work added to the final exam percentage, AT THE INSTRUCTOR'S DISCRETION.

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.

Marked Term Tests - an announcement will be made, in lecture and/or on the intranet and Blackboard, when tests are marked. You have one week to check your test with Shadi Dalili, during any office hours, or other announced times. Re-marking claims will only be considered for one week after the announcement has been made. Claims must be accompanied by a written statement, outlining the reasons (referenced, if necessary) to support your claim for extra marks.

In-class Conduct

- Please turn off all cellphones, laptop computers, and tablets when you come into the class, unless you are using them for in-class participation ONLY.
- Class starts at 8:10 am. Late arrival or early departure is inappropriate and will negatively affect your participation grade.
- Do not bring food into the classroom as this creates unwanted distractions that will affect the learning environment.
- Regarding anything that you might want to use in the classroom: if you are not using it to perform a task specifically related to what we are doing in class at that very moment, please put it away

Lecture Schedule: This will be posted on Quercus and announced in class.

AccessAbility: 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 us and/or the AccessAbility Services Office as soon as possible. The UTSC AccessAbility Services staff (located in S302)

are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or ability@utsc.utoronto.ca. The sooner you let us know your needs, the quicker we can assist you in achieving your learning goals in this course.

Cell Phones: During lectures, please turn off your cell phones to avoid disruption of the class. If circumstances warrant use of your cell phone and you must receive an emergency call, please inform the instructor in advance at the beginning of the session, and excuse yourself from class to receive the call.

Academic Calendar: Further information about academic regulations and course withdrawal deadlines can be found in the UTSC Calendar. You are encouraged to read this material.

Centre for Teaching and Learning: If you need assistance with effective writing skills, study skills, exam preparation, note taking, or time management, free workshops and advice are available from the Center for Teaching and Learning, which can be reached at: http://www.utsc.utoronto.ca/~ctl/Student_Support/index.html

Computer Use: Ethical use of University computers is expected at the University of Toronto Scarborough. Guidelines are set out in the UTSC calendar. It is expected that the equipment and/or resources accessed in the UTSC library and the computer labs are to be used for academic research, assignments, and course activities only.

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.

The most serious offence is impersonation of another student. This applies if you use multiple clickers or bring other students' clickers to class and use them to vote. I will be enforcing this policy strictly in class. Any student in violation of this rule and using multiple clickers will have them confiscated and will forfeit the 5% mark for the participation mark for the clickers. If the offence is repeated, the student will be reported to the Chair and Dean for academic offenses and will have to meet with them in person to explain their actions.