Organic Chemistry I (CHMB41H3)
Winter 2020

Welcome to CHMB41H3! This course is designed to expose you to exciting real world applications of organic chemistry. You will learn the fundamentals of naming organic compounds, understanding the 3-dimentional shapes of organic molecules, bonding, chemical synthesis and reaction mechanisms.
Pre-requisites: CHMA10H3 & CHMA11H3

Lectures:
Tuesdays 1:00-3:00 pm SW143 & Thursdays 1:00-2:00 pm SW143

Course Instructor & Lab Coordinator: Dr. Nirusha Thavarajah
Email: nirusha.thavarajah@utoronto.ca
Office Hours: Tuesday 3:10-4:30 pm, Wednesday 3:10-4:00 pm, Thursday 3:10-4:30 pm (lab office SW155)

Email Policy:
- Use UTSC account for all your correspondences. If other accounts (Yahoo, Gmail, Hotmail, etc.) are used, your email will be filtered out as spam and may not be received.
- Put CHMB41H3 in the subject line followed by the reason for the email.
- Use professional language with a formal greeting.
- Sign the email with your first and last name. Include your student ID number after your name.
- Every effort will be made to respond to student emails within 36 hours (M-F) provided that the above protocol is used.
- Questions on the lab or tutorial materials should be directed first to your TA.

Course Website: CHMB41 maintains a Quercus web space which archives a variety of course-related information including: class announcements, lecture slides, lecture recordings (only available for 2 weeks), 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 (CHMB41H3 Winter 2020). The support site is https://qinfo.utoronto.ca

Textbook: Ogilvie's Organic Chemistry Mechanistic Patterns Textbook. Chapters 1-8, &11.
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.

Announcements: Official course announcements regarding assignments, tests, material covered for each test, exam and other important announcements will be posted on the CHMA11H3 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

Methods of Evaluation:

Graded Work	Weight (%)
*Term Test 1	15
*Term Test 2	20
Final Exam	30
**Tutorial Quizzes	10
***Laboratory	25
Bonus Assignment	2

* 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.*
** 3 tutorials may be missed without penalty; thus, you can drop your 3 lowest marks from the overall tutorial mark
*** 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 term tests and final exam (2 out of 3 assessments). If you miss one of the two term tests, you MUST pass the other term test written AND the final exam in order to pass the course.

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.
Please note: Final exam marks WILL NOT be posted on Quercus.
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. N. Thavarajah** 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 on Quercus, when tests are marked. You have one week to check your test with Dr. N. Thavarajah, during office hours. 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 to take notes ONLY.
• Class starts at 10 minutes after the hour. Late arrival or early departure is inappropriate and will negatively affect your learning.
• 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

Tutorials:

Tutorials take place *EVERY WEEK*. ALL tutorial sections begin week of January 13th 2020.
The tutorial component of CHMB41H is compulsory. Each tutorial will include a graded worksheet and/or quiz. THERE ARE NO MAKEUPS FOR TUTORIALS MISSED. You can drop your THREE lowest grades from the total, so that you may miss up to 3, without losing the 10% worth of the tutorial for your final grade.

Laboratory:

The laboratory component of CHMB41H is compulsory. In order to pass the CHMB41H course, students must pass the lab component of the course.
Odd numbered labs Sections (week 1 students) begin labs week of January 13th 2020
Even numbered labs Sections (week 2 students) begin labs week of January 20th 2020
**All CHMB41H3 practical sections will be closed as of 12:00 pm on Monday, January 6th 2020. After this date, no more changes can be made.

Absence from the Lab:

If you miss your lab session without a VALIDATED reason, you will be given a zero. It is expected that you attend all labs in your assigned lab time. If you are ill, or have another VALID reason for missing a lab, (e.g. Court attendance required) you must contact the course coordinator at your earliest possible opportunity (weeks ahead, if known). If you do fall ill, email nirusha.thavarajah@utoronto.ca before the beginning of the scheduled lab or WITHIN 24 HOURS about your absence.

Submit appropriate documentation to support the reason for your absence within 5 business days of your absence. If the reason for your absence is medical, submit a UTSC Medical Certificate completed by your doctor (downloadable at: http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf).
Note that the completed medical note must meet the following criteria:
·Your physician must have examined you during the period of illness/injury (not after the fact)

The missed lab period must fall within the indicated start date and anticipated end date. The physician must rank your illness as either moderate, serious or severe; 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
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If no acceptable documentation is received within 5 business days of your absence, you will receive a grade of zero for the missed lab. This zero applies to all aspects of the missed experiment (products/results, notebook, quiz, lab performance)./* 4 Once your absence has been validated, accommodations will be made for your missing grades. When possible, a make-up lab will be scheduled. If a make-up lab cannot be arranged, the grades for the missed experiment will be distributed among the remaining 4 labs. If a student should miss a *second lab*, NO MAKEUP LAB WILL BE GRANTED, and the grade will be moved to the lab test section of the final exam.

If more than two labs are missed in the course, students will not be allowed to pass the course – regardless of whether the reasons for their absences are valid.
If you need to reschedule a lab due to a conflicting assessment at the same time and day as your lab, you will need to provide documentation to show this, and may do a make-up lab session only under the conditions set above and if there is space available in another lab session. You will not be allowed to miss a lab on the same day of a CHMB41 midterm and/or do a makeup 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.

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.

Lab Manual: The first experiment, 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 Video and Quiz: 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 Quercus 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**.

Additional Learning Resources:

In-Class Peer-Peer Instructions: Students are strongly encouraged to attend lectures to participate in Peer-Peer instructions. These are in-class discussion sessions for students to practice the concepts.

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.

Chem Aid Center:
TAs will be available in the ChemAid Center to tutor and help you with any questions on course material. The Chem Aid Center will be open starting the second week of classes (hours will be announced on Quercus). 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.

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. CHMB41H3 is supported by FSGs. These weekly study sessions are open to everyone in the class. Attendance is voluntary, but students who attend regularly often earn higher grades. Please be sure to fill out the survey in the first week of class to help ensure the study groups are scheduled at optimal times. If you have any questions, please ask your facilitator, or visit the FSG website at http://ctl.utsc.utoronto.ca/home/fsg.

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.

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