



Introductory Chemistry II (CHMA11H3)

Summer 2014

University of Toronto at Scarborough

Welcome to Introductory Chemistry Part II! You are about to continue your intellectually stimulating and exciting journey in the wonderful world of chemistry. You will find the learning experience in this course to be memorable and applicable in your future chemistry courses. In this course you will learn about many interesting topics, including inter molecular forces, covalent and ionic bonds, chemical kinetics, catalysis, chemical equilibrium, entropy, free energy and electrochemistry. By the end of this course you will understand many real life applications of chemistry.

Instructor:

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Office Hours: Thursdays 12:10-2:00 pm, Fridays 1:00-3:00 pm and appointments to meet at an alternate time. Location for the office hours: PO#104- RM #109

Appointments for virtual office hours are also available upon request.

Lab Coordinator:

Dr. Scott Ballantyne

Email: sballant@utsc.utoronto.ca

Office Room #: SW 155C

Office Hours: Mondays and Wednesday 10:30 am to 12:00 pm

Email Policy: Please use a valid “utoronto.ca” or “utsc.utoronto.ca” account for all CHMA11H3 correspondence. If you use other accounts, it may be filtered out as spam and may not be received.

Required Text Book: *Chemistry: A Molecular Approach, Canadian Edition, By Tro, Fridgen and Shaw* (the same text book you used in CHMA10). The text, solutions manual and the online homework program (Mastering Chemistry) can be purchased together from the UTSC book store as a package. If you took CHMA10 in September 2013 or January 2014 you can continue to use your Mastering Chemistry account for this course. There is also a Digital Only Option: Digital Access only, is available from the UTSC bookstore at the cash register; alternatively you can go online to www.masteringchemistry.com and purchase access to Mastering Chemistry with e-text. Note that the Digital only option does not give you access to the students solutions manual, which can be purchased separately.

Lectures: Mondays 2:00-4:00 pm, Thursdays 10:00 am-12:00 pm at SY 110. ***I strongly encourage all of you to attend all the lectures to engage in the participatory lessons! Web-Option lecture casting is available as a supplementary course material.***

Website: Lecture materials (including videotaped lectures), Laboratory materials, grades and class announcements are posted on the CHMA11H3 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 UTORmail). Under the “My Courses” box (top right), click on the CHMA11H3 link.

Announcements: Official announcements regarding test locations, material covered for each test 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

Lecture format: Each lecture will begin with a “**Bridging tool**”. The bridging tool is intended to stimulate your interest and to help you see the real world application of that day’s lesson. I use videos, animations, demonstrations, images and artifact as bridging tools. Based on the bridging tools we will have an actively engaging discussion on the **learning objectives** for that day. This is followed by a **pre-assessment quiz** (5 min) (not for grading) to test your background knowledge on the subject and a **participatory lesson**. Students will be assigned in to study groups. Each study group will select a team leader who will keep record of the contributions from each student. These student study groups will participate in all activities designed for active learning such as: team concept maps/flow charts, the “Chalk Board” game, “Web Quests” and Course learning outcome poster at the end of the term. The resources created by the study groups will be shared by all students as a supplementary resource for the course. Each lecture will have a **post assessment (5 min) quiz** (not for grading) at the end of each lecture to assess the learning outcomes. The lecture will conclude with a summary of the lesson and stimulate your thoughts with a question to be answered in the following lesson. **All students are strongly encouraged to participate in all the in class activities to receive a letter of recognition for active learning in CHMA11H3. I thank you all in advance for taking part in the learning community of CHMA11H3! Each and every one of you bring a unique contribution to this learning community!**

Active Learning in Introductory Chemistry II:

“Learning Catalytics”: This is an interactive tool (freeware) for your phones to actively engage in discussion session. More instructions on this will be posted on blackboard.

“The Chalk-Board Game”: I will use this game as a review tool for concepts. Very similar game rules as “jeopardy”.

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.*

“Web Quest”: Students will participate in an inquiry-based activity, where all the necessary online resources will be provided. Students will investigate assigned questions. At least one of the tutorials quizzes will be based on the “web quest” activity. This activity will help students to apply the concepts they learned in class to the real world applications.

Course Surveys: There will be a pre-class and a mid-class surveys during the term to gather student feedback. More information on this will be announced on blackboard.

Team Concept Maps/Flow Charts: Students will be assigned in to study groups at the beginning of the term and each study group will create concept maps/ flow charts on the assigned lesson (s). These concept maps/flow charts will be submitted by the students and will be posted on blackboard to be

available for all students as a supplementary resource to study for the exams. This strategy is intended to teach time management and collaborative learning. Additional details will be posted on the blackboard.

Course Learning Outcome Posters: Each group will create a course learning outcome poster at the end of the term to show case and transform their knowledge in to real world applications. More details will be posted on blackboard.

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.

All students are strongly encouraged to participate in all of the active learning activities to receive a letter of recognition for active learning in CHMA11H3.

Assessment and Grading Practices:

Methods of Evaluation	Contribution to the Final Grade
Tutorials	3%
Mastering Chemistry (MC) Online Home Work (Optional: If you opt out of MC, the tutorials will be weighted 5%).	2%
Laboratory* (Must pass the lab component to pass the course)	25%
Mid-Term Test	25%
Final Exam	45%
TOTAL	100%

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). 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.

Calculators: Only non-programmable, non-communicating calculators are allowed in tests and exams for this course (both lecture and lab). Invigilators have the authority to check calculators during tests and exams. Students who have illegal calculators confiscated during a test/exam will be supplied with an allowed calculator but an immediate penalty of 10% will be imposed for that test/exam. Students without

a calculator will also be allowed to borrow an allowed model, but at the cost 10% off their mark on that test/exam.

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 12:00 noon and will be available until 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 **THAVACHMA112014**.

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. **Note:* If you decide to opt out of mastering chemistry online homework, please do not submit any of the online homework.

Laboratories: The laboratory component of CHMA11 is compulsory. ****In order to pass the course, you must also pass the lab component.**

Lab Schedule: Odd numbered practical's ("week 1 students"): Your first lab will be on Wednesday May 14th. Even numbered practical's ("week 2 students"): Your first lab will be on Wednesday May 22nd

Lab Manual and Notebook: A lab manual must be purchased from Environmental and Physical Sciences Student Association (EPSA) located in S520A before your first lab. You may not use a lab manual from a previous semester: the experiments and course requirements will be different. **DO NOT** wait to purchase your lab manual as it contains a host of important information:

Lab Schedules and other important dates

Late and absence policies

Rules regarding safety

Appropriate attire for the labs

Marking schemes

Guidelines on how to properly prepare for the lab

EPSA DOES NOT stock enough lab manuals for everyone. If they run out, you **MUST** preorder a copy through EPSA. Failure to adhere to the rules and policies outlined within the lab manual will adversely affect your lab mark - in some instances the impact will be severe. In addition, students will be required to purchase their own lab notebook. The book must be hard cover, permanently bound (not spiral or loose leaf) with the approximate dimensions 8.25" x 10.5" inches. They can be purchased at the UTSC bookstore; however students are free to purchase their books at a merchant of their choice (so long as they meet the above requirements). Students can re-use their lab manual from CHMA10.

Lab Safety:

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 enroll in the U of T WHMIS online course (EHS005) accessible through the Portal website using your UTORid. Instructions on how to access the course will be posted on the CHMA11 blackboard site. You will be expected to watch the video (approximately 30 minutes long) and take a multiple choice quiz on the material you just learned. You must obtain 80% on the quiz to pass the WHMIS course. You will be required to print off your quiz results and present them to your TA before you will be allowed to enter the lab. Students who have already passed the course (i.e. if you took CHMA10 last term) do not have to take EHS005 again; however, all students will be expected to print off your results and present them to your TA before you will be allowed to enter the lab.

Lab Coats and Safety Glasses:

Lab coats and safety glasses must be worn at all times in the laboratory. Students will be required to purchase approved indirect vented chemical splash safety goggles (mandatory), safety glasses (optional) and a lab coat (mandatory) before attending their first lab. These items can be purchased from both the Environmental and Physical Sciences Student Association (EPSA) and the Biology Student Association (BioSA) or the bookstore. All safety eyewear must meet either ANSI Z87+ or CSA Z94.3 Standard for high impact protection (if you see one of those standards stamped on your eyewear somewhere then they meet that particular standard). Labs coats must not contain more than 65% polyester material. Further information regarding appropriate attire please see the guidelines outlined in your lab manual. Note that students not wearing approved safety gear will not be allowed to participate in the lab.

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](http://www.planningandbudget.utoronto.ca/Assets/Academic+Operations+Digital+Assets/Planning+$!26+Budget/2012-13+Category+5+Ancillary+Fees.pdf)

Tutorials: Tutorials are scheduled in the same time slot as your laboratory but in the alternate week. Your tutorial section is linked to your lab section and is the same section number as your lab section (i.e. PRA0001 students are assigned to TUT0001).

Attendance at the tutorials is compulsory and the tutorial quizzes will count towards your final grade. The tutorials are scheduled within the same time slot as your CHMA11H laboratory but in the alternate week of your assigned laboratory. The duration of the tutorial is one hour. The room assignments for the tutorials ARE NOT THE SAME as your labs. Your Tutorial number (TUTXXXX) is the same as your Practical number (PRAXXXX). Please check the CHMA11H web site (intranet) for a link to the timetable where you can view the times and room assignments of your tutorials.

Week 1 lab students

Students assigned to tutorial sections ending in odd numbers, TUT0001, TUT0003, TUT0005 etc. will have their first tutorial on Wednesday May 21st.

Week 2 lab students

Students assigned to tutorial sections ending in even numbers, TUT0002, TUT0004, TUT0006 etc. will have their first tutorial on Wednesday May 14th.

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 web site:

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

The document must be presented within one week of the date of absence. However, you should notify the course instructors the day of your absence (see your lab manual regarding absences from the lab. 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.

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 Behavior 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.

CHMA11H3 Lecture Schedule (*Tentative)

** Subject to Change. Check Blackboard for Lecture Schedule Updates.

Lecture Dates	Lecture Topics	Suggested Readings
May 5 th , 8 th	Review of chemical bonding Liquids, Solids and Intermolecular forces	Review on 10.1-10.8, 11.1-11.13
May 12 th , 15 th	Solutions and their physical properties, Chemical kinetics	12.1-12.8, 13.1-13.2
May 19th	Victoria Day-University Closed	-
May 22 nd	Chemical kinetics cont'd	13.3-13.7
May 26 th , 29 ^h	Chemical Equilibrium	14.1-14.4
June 2 nd , 5 th	Chemical Equilibrium cont'd	14.5-14.8
June 9 th , 12 th	Acids and Bases	15.1-15.7
June 16 th	Acids and Bases cont'd	15.8-15.12
June 17th -21st	Reading Week No classes	-
June 23 rd , 26 th	Aqueous Ionic Equilibrium	16.1-16.4
June 30 th , July 3 rd	Aqueous Ionic Equilibrium cont'd	16.5-16.8
July 7 th , July 10 th	Gibbs Energy and Thermodynamics	17.1-17.4
July 14 th , 17 th	Gibbs Energy and Thermodynamics cont'd	17.5-17.9
July 21 st , 24 th	Electrochemistry	18.1-18.4
July 28 th	Electrochemistry cont'd	18.5-18.9
July 31 st	Final Exam review	
August 4th	Civic Holiday-University Closed	-