



Introductory Chemistry II (CHMA11H3)

Summer 2013

University of Toronto at Scarborough

Welcome to Introductory Chemistry Part II! You are about to continue your exciting journey in the wonderful world of chemistry. On this journey, 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. Real life examples will be discussed for all the lecture topics. At the end of this course you will clearly understand that *chemistry is all around us!*

Instructor:

Dr. Nirusha Thavarajah

Email: nirusha.thavarajah@utoronto.ca

Contact Number: 416-287-7224 or 647-302-3012

Office Hours: Wednesdays 9:00 am-10:00 am and Thursdays 12:10-2:10 pm and with appointments at PO#104- RM #109

Virtual Office Hours: Mondays 9:45-10:45 pm (Please Check the Blackboard for Instructions)

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.

Text Book:

Chemistry: A Molecular Approach, 2nd Ed., by Nivaldo J. Tro. The text, solutions manual and the online homework program (Mastering Chemistry) can be purchased together from the UTSC Bookstore as a package.

Lectures: Mondays 2:00-4:00 pm, Thursdays 10:00 am-12:00 pm in SW 319

Fundamental contents of the course will be presented and elucidated in lectures. ***Please make every effort to attend all CHMA11H3 lectures!***

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 UTOEmail). 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

Assessment and Grading Practices:

Methods of Evaluation	Contribution to the Final Grade
Online Homework/Tutorials	5%
Laboratory*	25%
Mid-Term 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).

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). The following specific models available at the UTSC bookstore are acceptable for this course:

Texas Instruments: TI-30X IIS (SKU# 10048306), Sharp: EL-520WB (SKU# 10048016), EL-531WB (SKU#10047965), EL-546WB (SKU# 10047880), Casio: FX-260 (SKU# 10009994)

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 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 **THAVACHMA11H3**.
- 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.

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 15th.
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 the UTSC Bookstore before your first lab. You may not use a lab manual from a previous semester: the experiments and course requirements will be different! 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)

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

The bookstore **DOES NOT** stock enough lab manuals for everyone. If they run out, you **MUST** preorder a copy through the bookstore – this takes time. 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.

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 University of Toronto 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.

Please note if you successfully passed CHMA10 in the Fall of 2012 or in the Winter of 2013, then you have already taken and passed the EHS005 WHMIS course and you do not need to enroll again. However, you will be expected to print off your results and present them to your TA before you will be allowed to participate in the first lab.

Safety Equipment: Students will be required to purchase indirect vented chemical splash goggles (mandatory), safety glasses (optional) and a lab coat (mandatory) before attending their first lab. Lab coats must not contain more than 65% polyester material. These items can be purchased from the Environmental and Physical Sciences Student Association (EPSA), the Biology Student Association (BioSA) or the UTSC bookstore. Further information regarding appropriate attire please see the guidelines outlined in your lab manual.

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>

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 22nd.

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 15th.

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. 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.

Interactive Learning in Introductory Chemistry

- a) **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.
- b) **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.*

- c) **Surveys:** Course survey will be maintained on Blackboard to gather student feedbacks and comments on the course materials to guide future instructions.
- d) **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.
- e) **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.
- f) **Virtual Office Hours:** I will be holding virtual office hours on Mondays 9:45-10:45 pm (Please Check the Blackboard for Instructions).

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)

Dates	Lecture Topics	Suggested Readings
May 6 th , 9 th	Review of chemical bonding; Intermolecular forces	10.1-10.8 11.1-11.4
May 13 th , 16 th	Properties of liquids and solids, phase diagrams, covalent/ionic solids, crystal structures	11.5-11.13
May 20th	Victoria Day-University Closed	-
May 23 rd	Solutions and their physical properties	12.1-12.8
May 27 th , 30 th	Chemical kinetics	13.1-13.6
June 3 rd , 6 th	Catalysis, Introduction to chemical equilibrium	13.7, 14.1-14.6
June 10 th , 13 nd	Chemical equilibrium continued, Mid-term review	14.7-14.9
June 17 th	Introduction to acids and bases	15.1-15.7
June 18th - 22nd	Reading Week No classes	-
June 24 th , 27 th	Acid-base properties of salts and polyprotic acids; molecular structure and acid strength; Lewis acids and bases	15.8-15.12
July 1st	Canada Day – University Closed	-
July 4 th	Aqueous ionic equilibria: Buffer solutions, titration curves, solubility equilibria, complex ions	16.1-16.8
July 8 th , 11 th	Spontaneous change, entropy, free energy	17.1-17.5
July 15 th , 18 th	Free energy and entropy changes in chemical reactions/equilibria;	17.6-17.9;
July 22 nd , 25 th	Introduction to electrochemistry	18.1-18.6
July 29 th , August 1 st	Applications of Electrochemistry, Final Exam Review	18.7-18.9
August 5th	Civic Holiday-University Closed	-
August 8th - 20th	Final Exam Period	-