



## Introductory Chemistry II (CHMA11) - Winter 2010 University of Toronto at Scarborough



Welcome to CHMA11! Chemistry is an exciting subject with far-reaching applications in countless disciplines (biology, medicine, geology, environmental science, neuroscience, forensics, food science – the list goes on!). CHMA10 might have given you a taste of this, but in this course we're going to take things even further. We'll be continuing to teach you the fundamentals of the subject, but our hope is that this course will also give you an appreciation for the depth and importance of this discipline. By the end of the semester, you should be thoroughly convinced that chemistry is indeed *all around you!* Before we get started, please take a few minutes to read through this document. It contains important information which will help make sure you have all the tools you need to succeed in this course.

### ***Staff Contact Information:***

#### **Instructors:**

Prof. Jamie Donaldson (weeks 1-6)  
SW412A  
Email: [jdonalds@utsc.utoronto.ca](mailto:jdonalds@utsc.utoronto.ca)  
Office Hours: Mondays 3:30-4:30  
Wednesdays 3:30-4:30  
Fridays by appointment

Dr. Effie Sauer (weeks 7-12)  
SW506E  
Email: [esauer@utsc.utoronto.ca](mailto:esauer@utsc.utoronto.ca)  
Office Hours: Mondays 3:30-4:30  
Wednesdays 3:30-4:30  
Thursdays 1:30-3:00  
Fridays 3:30-4:30

#### **Lab Coordinator:**

Lin Teo  
SW155C  
Email: [teo@utsc.utoronto.ca](mailto:teo@utsc.utoronto.ca)  
Office Hours: Tuesdays 10:30-12:00  
Thursdays 10:30-12:00

### ***Email Policy:***

Please use a valid "utoronto.ca" account for all CHMA11 correspondence. Emails received from other accounts are frequently filtered out as spam and may not be received. When composing your email, please use professional language. Be sure to include the course code as part of the subject line and sign the email with your first and last name, as well as your student ID. Your email will be answered as soon as possible.

**Required Text:**

*General Chemistry: Principles & Modern Applications*, 9th Ed., by Petrucci, Harwood, Herring and Madura. The text, solutions manual and the online homework program (Mastering Chemistry) can be purchased together from the UTSC Bookstore as a package. If you took CHMA10 last semester you can continue to use your text and Mastering Chemistry account for this course.

**List of Topics (Tentative\*):**

Week	Topic(s)	Suggested Reading
Jan 4-8	Review of chemical bonding; Intermolecular forces: properties of liquids and solids, phase diagrams, Van der Waals forces	(11.1-11.8) 12.1-12.5
Jan 11-15	Hydrogen bonding, covalent/ionic solids, crystal structures, lattice energy	12.6-12.9
Jan 18-22	Solutions and their physical properties	13.1-13.10
Jan 25-29	Chemical kinetics	14.1-14.11
Feb 1-5	Introduction to chemical equilibrium	15.1-15.6
Feb 8-12	Mid-term review; Introduction to acids and bases	16.1-16.4
Feb 15-19	Reading Week	n/a
Feb 22-26	Weak acids and bases, molecular structure and acid-base behaviour, Lewis acids and bases; Common ion effect in acid-base equilibria	16.5-16.9 17.1
Mar 1-5	Buffer solutions, indicators, neutralization reactions, titration curves	17.2-17.4
Mar 8-12	Review of precipitation reactions; solubility equilibria	(5.2) 18.1-18.8
Mar 15-19	Spontaneous change, entropy, and free energy	19.1-19.5
Mar 22-26	Free energy change and equilibrium, coupled reactions; review of REDOX reactions; Introduction to electrochemistry	19.6-19.8 (3.4, 5.4-5.6) 20.1-20.2
Mar 29-Apr 2	electrochemistry; exam review	20.3-20.8

*\*Subject to change. Check on Blackboard for the most up to date lecture schedule.*

**Website:**

CHMA11 maintains a Blackboard web space which archives a variety of course-related information including: class announcements, lecture slides, handouts, assigned readings and end-of-chapter problems, contact information and links to outside resources. In addition, class emails will periodically be sent via Blackboard. ***In order for you to receive these emails, you must have a valid "utoronto.ca" email account registered with ROSI.***



**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 CHMA11 link.

### **Discussion Board:**

An online discussion board will be maintained through Blackboard. 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 the course instructors and/or teaching assistants so as to ensure that all questions are answered accurately. In addition, frequently asked questions (with their answers) may also be posted here by the instructors and/or teaching assistants. *Please note:* Posts which contain answers/solutions to the Mastering Chemistry Homework Assignments are not permitted and will be promptly removed.

### **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 Wednesdays at 1:00 pm and will be due the following Tuesday at 9:00 am.

#### **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 **CHMA11S2010**
- 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 "Registering" click on the "New Students" button.
- Select "No, I am a New User" and type in your Access Code (comes with your textbook package) in the fields provided. Note that only one "word" should be entered per box.
- Make sure that the name you enter is the same as the name on file with ROSI. *Please do not use a fake name.*
- School Information: Under "Other School Name" type UTSC and then enter the School City as Toronto.
- Create a personal Login Name and Password. *You must use the same login ID and password that you use for the UTSC intranet.* This is very important since we may need to use this login name to identify you in the event that there are two students who share the same name.
- Security Question: Please fill this in and keep it safe in case you forget your password.
- Keep your Mastering Chemistry login and password (UTSC intranet login and password) secret. This will prevent other students from accessing your account.
- Now that you have an account, follow the instructions above to enroll in the Mastering Chemistry account for this course.

### **Midterm:**

There will be one mid-term test written outside of class either just before or just after reading week. The exact date, time and location will be announced as soon as they are available. Please *note that there will be no make-up tests.* Should you miss the mid-term due to a legitimate reason, you must submit appropriate documentation *within one week of your absence.* If the reason is medical, an official UTSC medical form should be downloaded from [http://www.utsc.utoronto.ca/~registrar/resources/pdf\\_general/UTSCmedicalcertificate.pdf](http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf) and completed by your doctor. Due to concerns of an outbreak of the H1N1 flu virus, you may not



be able to see a doctor if you present flu-like symptoms. In this case, you must document your illness on ROSI and submit a print-out of the ROSI confirmation instead of the medical note. *If no acceptable documentation is received, you will receive a grade of zero for that test.*

With a validated absence, the value of the missed test will be added to your final exam. Please note that on page 328 of the 2009/2010 UTSC Calendar it states: "You cannot petition to withdraw from a course on the grounds that no work was returned to you before the last day to withdraw without academic penalty if this is the result of your having been given an extension to complete your work for reasons relating to you and not the rest of your class."

#### ***Final Examination:***

There will be a 3-hour, *cumulative* exam written during the end of semester exam period. The exact 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.* e.g. for a missed April Final Exam, the make-up Exam is in August. Your documentation is crucial for a successful petition and must be submitted by the last day of the exam period. Check the UTSC Calendar for instructions and deadlines.

#### ***Labs:***

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

#### **Lab Schedule:**

Odd numbered lab sections ("week 1 students"): Your first lab will be in the week of Jan 11/10

Even numbered lab sections ("week 2 students"): Your first lab will be in the week of Jan 18/10

#### **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. A notebook will be given to you during your first lab period.

#### **Lab Coats and Safety Glasses:**

Lab coats and safety glasses must be worn at all times in the laboratory. Contact lenses may not be worn in the laboratory. If you wear prescription eye glasses, you must purchase a pair of safety goggles that fit over your eye glasses. These items can all be purchased from the UTSC Bookstore. *You will not be allowed to work in the laboratory unless you are wearing approved eye protection and a lab coat.*

#### **Lab Rules:**

- *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 there:* 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.

#### **Absences from the laboratory:**

If you need to miss a laboratory period for any valid reason, you must immediately report it to your TA by phone or email. You should also leave a message with the lab coordinator, Lin Teo.



If the reason for your absence is medical then you must provide documentation. Normally, this would be in the form of a UTSC medical note completed by your doctor (downloadable at: [http://www.utsc.utoronto.ca/~registrar/resources/pdf\\_general/UTSCmedicalcertificate.pdf](http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf)); However, due to concerns of an outbreak of the H1N1 flu virus, it is possible that you will not be able to see a doctor if you present flu-like symptoms. In this case, you should document your illness on ROSI and submit the ROSI confirmation instead of the UTSC medical note. *If no reason for your absence is made before your next scheduled lab period, a mark of zero will be given for that lab.*

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

### ***Tutorials:***

On weeks when you don't have a lab, there will be an hour-long tutorial. You do not need to register for the CHMA11 tutorials on ROSI as they are linked to your lab section. Your tutorial section number is the same as your lab section number (e.g. if you are in PRA001, your tutorial section is TUT001). Please check the UTSC timetable to confirm the time and location for your tutorial section. Note that attendance at the tutorials is mandatory. You will be allowed to miss one tutorial "free of charge," but after that you will lose 1% from your homework mark for each additional tutorial that you miss.

### **Tutorial Schedule:**

Odd numbered tutorial sections: Your first lab will be in the week of Jan 18/10

Even numbered tutorial sections: Your first lab will be in the week of Jan 10/10

### ***Grade Calculation:***

There will be two grading schemes used in CHMA11. Your grade will be calculated using both schemes and the **higher** of the two will be assigned as your final grade.

Graded Work	Scheme A	Scheme B
Online Homework/Tutorials*	5%	5%
Laboratory**	25%	25%
Mid-Term Test***	15%	25%
Final Exam	55%	45%

\*Your lowest grade will be dropped; 1% will be removed for each tutorial missed after the first absence.

\*\*You must pass the laboratory to pass the course.

\*\*\*There is no make-up test. If your absence is excused, the weight of the test will be moved to the final exam.

Note: To pass the course, you must pass the laboratory and *either* the term test or the final exam (and receive a final grade of 50+, of course!)

### ***Online Grades:***

Individual grades will be posted on the intranet (not Blackboard) 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.



### ***Calculators:***

In accordance with the University of Toronto Scarborough Calculator Policy, only the following specific models will be allowed in all CHMA10/CHMA11 tests and exams:

Texas Instruments: TI-30, TI-34II Explorer Plus, TI-32 Explorer Plus, TI-32  
Sharp: EL-531, EL-520, EL-509  
Casio: fx-65, fx-250, fx-260, fx-280

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.

### ***Accessibility:***

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 me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. 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](mailto:ability@utsc.utoronto.ca).

### ***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.