

**Fall 2007**  
**CHM B20F: *Thermodynamics and Elementary Kinetics***

**Instructor:**            **Zia Siddiqi**  
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**Office hours:**        **M 02:00 – 03:00 PM**  
                              **W 11:00 AM – 01:00 PM**

**Textbook:**            ***Physical Chemistry;***  
**Thermodynamics, Statistical Thermodynamics, & Kinetics**  
by Thomas Engel and Philip Reid

**Reference book:** ***Physical Chemistry;***  
by Peter Atkins and Julio de Paula, 8<sup>th</sup> edition,  
W.H. Freeman and Company, New York, 2006.

<b>Course Grading:</b>	<b>Assignments</b>	<b>20%</b>
	<b>Tutorial Quizzes</b>	<b>20%</b>
	<b>Midterm Test</b>	<b>25%</b>
	<b>Final Exam</b>	<b>35%</b>

**Midterm Test: TBA**

**Final Exam: TBA**

**CHM B20F 2007-08**  
**TENTATIVE SCHEDULE AND TOPICAL OUTLINE**

<b>Week</b>	<b>Topics</b>	<b>Chapter reference</b>
Sept 10	Introduction. Some simple math ideas, The ideal gas model for matter, Heat and work; state functions and path-dependent quantities.	Ch. 1; 2.1-2.5
Sept 17	Reversible and irreversible pathways, State functions: U and H.	Ch. 2.6-3.6
Sept 24	Following changes in the system through $\Delta U$ and $\Delta H$ .	Ch. 4
Oct 01 & 08	All about entropy	Ch. 5.1-5.10
Oct. 15	Free energy – a handle on the universal entropy change Phase changes	Ch. 6.1-6.4 Ch. 8.1-8.6
Oct 22	Free energy 2: mixtures and chemical equilibrium	Ch. 6.5-6.13
Oct 29	Real vs. ideal mixtures	Ch. 7; 9.1-9.3
Nov 05	Real solutions	9.4-9.13; 10.4
Nov 12	Electrochemistry	Ch. 11
Nov 19	Kinetics: Introduction, reaction rate laws, sequential reactions	Ch. 36.1-36.7
Nov 26	Kinetics: parallel reaction, temperature effect on rate, activation complex theory	36.8-36.11, 36.14
Dec 03	Complex Reactions: reaction mechanism and rate constant, catalysis, radical chain reactions, photochemistry <b>Review</b>	Ch. 37.1-37.8

\*\*\*\* There will be NO LECTURE on the following date: \*\*\*\*

Oct 08; Thanksgiving

## POLICIES AND PROCEDURES

**Calculator Policy:** *Only following APPROVED calculators may be used*

Texas Instruments (TI-30, TI-34II Explorer Plus, TI-Explorer Plus, TI-32); Sharp (EL-531, EL-509); Casio (fx-65, fx-250, fx-260, fx-280).

Invigilators have the authority to check calculators and confiscate any not appearing on the above list. Should this happen an immediate penalty of 10% will be imposed on this test.

**Cell Phone Policy:** No cell phones are allowed with the students or at their desks during the test/exam. A cell phone is considered as an unauthorized aid since it can store text information and images and is therefore covered under the unauthorized aid in Code B.i. (b) (p. 404 of the 2007/08 Calendar).

**Assignment:** Only hard copy, preferably typed, is accepted.

**Late Submissions:** A penalty of 15% of marks per day for assignment. No marks after 5 days from due date.

### **ABSENCES - Term Tests and Exams**

**THERE IS NO MAKE-UP FOR THE TERM TEST.** Provided that your medical note clearly outlines the reason for your absence then the 25% for the term test will be added to the final exam and the final exam will then be worth 60% of your final mark. Please note that on page 392 (5c) of the 2007/2008 UTSC Calendar it states: "**You cannot petition to withdraw from a course on 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.**" Should you have to miss the term test then you should notify the CHM B20F Instructor, Zia Siddiqi at 416-287-7213 or email [zmsiddiqi@utsc.utoronto.ca](mailto:zmsiddiqi@utsc.utoronto.ca) as soon as possible and have the UTSC medical form completed by your doctor.

#### **The medical note should:**

- verify that the student was examined on the day of the test*
- *if possible, state the illness and*
- *it MUST indicate the physician's professional opinion as to whether the student should receive special consideration on medical grounds.*

**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!**