

CHM B20F 2006-07
Thermodynamics and Kinetics

Instructor: James Donaldson
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Office: S-412A 416-287-7213

Office hours: M 10:00 – 12:00
W 14:00 – 15:00

Textbooks: *Physical Chemistry*, by Engel and Reid
Physical Chemistry: A Guided Enquiry – Thermodynamics, by
Spencer, Moog and Farrell

Course Grading:	Homework Assignments	22%
	Tutorial Quizzes	18%
	Midterm Test	25%
	Final Exam	35%

The relative weights of the different grading elements may change (except for the final), but only with >80% of the class' approval

CHM B20F 2006-07 Class outline

<u>Week</u>	<u>Topics</u>	<u>Chapter reference</u>
Sept 11	What is physical chemistry? 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 18	Reversible and irreversible pathways. State functions: U and H.	Ch. 2.6-3.6
Sept 25	Following changes in the system through ΔU and ΔH .	Ch. 4
Oct 2	All about entropy	Ch. 5.1-5.10
Oct. 16	Free energy – a handle on the universal entropy change Phase changes	Ch. 6.1-6.4 Ch. 8.1-8.6
Oct 23	Free energy 2: mixtures and chemical equilibrium	Ch. 6.5-6.13
Oct 30	Real vs. ideal mixtures	Ch. 7; 9.1-9.3
Nov 6	Real solutions	9.4-9.13; 10.4
Nov 13	Electrochemistry	Ch. 11
Nov 20	Kinetics: phenomenology and interpretations in terms of Mechanisms	Ch. 18.1-18.8
Nov 27	Kinetics: Mechanisms	Ch. 18.9,10,13,14
Dec 4	Complex kinetics Review	Ch. 19.1-19.4

**** There will be NO LECTURE on the following dates: ****

Sept 25; Oct 27; Nov 24