

CHEM 3011: Physical Chemistry
Chemical Kinetics
Course Outline, Fall 2015

prerequisite: CHEM 2011

Instructor: René Fournier, Petrie 303, renef@yorku.ca, phone ext. 30687

Required Text: Thermodynamics, Statistical thermodynamics, and Kinetics (TSK), by Thomas Engel and Philip Reid (Pearson Prentice Hall) 3rd edition (2013)

ISBN-10: 0-321-76618-0 or ISBN-13: 978-0-321-76618-2

Physical Chemistry (PC), by the same authors, contains all of TSK, plus chapters on Spectroscopy and Quantum Mechanics. It is perfectly suitable for the course.

Course web site: There should be a Moodle site up soon, hopefully.

Lectures: LSB 103, MWF 10:30–11:20

Office hours: Petrie 303, MWF 13:00-14:00

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<http://secretariat.info.yorku.ca/senate/academic-standards-curriculum-and-pedagogy-committee/>

Topics covered: rate laws, rate constants, transition state theory, diffusion controlled reactions, reaction mechanisms (generalities), mechanisms (cases), catalysis, photochemistry, electron transfer. Roughly chapters 35 and 36 in PC, with some additional material.

Evaluation

Two tests: 50% (25% each)

Final exam: 50%

The two **tests** will be 50 minutes long and worth 25 marks each. They will be held during class time on **Wednesday October 14** and **Friday November 13** (dates to be confirmed). The **final exam** in December will be 3 hours long. If you miss a test your marks will be shifted to the final exam. If you miss both tests, your final exam will be worth 100%.

Organization of the course

You may wish to take some notes during class. But I don't advise you to write down everything I show. It is more important to *listen* to what I say in class and try to follow "in real time" than writing down everything. My lecture notes, and yours, are only summaries and comments about the book's content, they are not a substitute for it. I will *not* post my lecture notes on the Web. Here's why.

1. The book is more complete and more accurate than any set of notes I could generate.
2. Having a set of lecture notes could give you a false sense of security and make you believe that you can safely skip classes: you can not.
3. I often make changes or additions to my lecture notes in class. I would not always be able to ensure consistency between web pages and what I show in class.

I will assign problems from time to time. Those assignments will not be marked, but they are very important. They will be an essential element for you to study in preparation for the tests and exam.

As a rule, you should count roughly one and a half hours of study and practice (e.g., assignments) for every lecture hour.

Important dates:

Monday Oct 12 — no class, Thanksgiving

Wednesday Oct 14 — test # 1

Friday Oct 30 — no class, Fall reading days are Oct 29 to Nov 1

Monday Nov 9 — last date to drop a course without a grade

Friday Nov 13 — test # 2

Monday Dec 7 — last day of class