**59-240 Introductory Physical Chemistry I Fall 2017 v1.0**

***General Information***

Updates are highlighted in yellow.

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|---|---|
| **Professor:** | Rob Schurko |
| **Office:** | 389 EH |
| **Email:** | Contact me via the web site listed below |
| **Website:** | http://chem240.cs.uwindsor.ca & **Blackboard Site** |
| **Teaching Assistants:** | Jacqueline Gemus, Alexander Tang, Cameron Vojvodin |
| **Lectures:** | M/W/F 12:30-1:20, **Chrysler Hall North G133** |
| **Tutorials:** | See schedule (M/R 2:30-3:45 - times/locations TBA) |
| **Laboratories:** | See schedule (M/T/W/R/F 2:30-5:30, 6:00-9:00, **235 EH**) |

**A. Instructional Materials**

***Textbooks:***

1. **Physical Chemistry Volume 1 PLUS Student Solution Manual (BUNDLE - MANDATORY)** – ISBN 9781464196072 *Physical Chemistry, Volume 1: Thermodynamics and Kinetics* [Paperback] – Peter Atkins and Julio de Paula, Oxford University Press, 2014 **+** Student Solutions Manual to Accompany Atkins' Physical Chemistry 10th Ed.: Marshall Cady, Carmen Giunta Charles Trapp, 2014 Edition, (10th Revised Edition) Publisher: Oxford University Press [Paperback] – Jun 27 2014 by Carmen Giunta Charles Trapp Marshall Cady (*Available at book store*)
2. **Volume 1 Paper Textbook Only (OPTION)** – ISBN 9781464124518 - *Physical Chemistry, Volume 1: Thermodynamics and Kinetics* [Paperback] – Peter Atkins and Julio de Paula, Oxford University Press, 2014 (*Not available at book store, buy separately online*)
3. *Applied Mathematics for Physical Chemistry* - (3rd Edition) ISBN 0131008455 J.R. Barrante, Prentice Hall, 2003 - **RECOMMENDED** for students who require a brush up on math related to physical chemistry. (*Out of print, used copies are available online and in used book stores*)

(**Note**: The 9th edition of Atkins is also supported; 8th edition can also be used, but no further updates or modifications to questions/answers are being made).

***Miscellaneous:***

1. Scientific calculator
2. Web access (Blackboard Site has all Lab Materials)

**B. Course Objectives**

1. To provide an understanding of the principles of physical chemistry.
2. To develop in the student the ability to solve quantitative problems.
3. To promote original thought on the part of the student and encourage the use of logic in the solution of problems.
4. To develop an ability in the student to learn and work independently.

**C. Tutorials** - Locations TBA, to be scheduled, Monday & Thursday 2:30-3:45
The purpose of these sessions will be to review material previously covered, and to assist in the solution of assigned homework problems (though not the questions from assignments or laboratory reports). **Tutorial sessions will be listed online.**

**D. Laboratories** - 235 Essex Hall - **Instructors**: Una Lee and Ronan San Juan
There are five physical chemistry laboratories, each of which demonstrates a physical principle discussed in this course. The laboratories are rotational, and are not directly synchronized with the time line of the course; thus, students will have to read ahead in some cases to understand the laboratory material. **All laboratory information, as well as the lab manual will be available on the 59-240 BlackBoard Site.**

***Outline of Course Material***

Below is an outline of the material to be covered over the course of the semester, and corresponding chapters in P.W. Atkins' "*Physical Chemistry - 10th Edition*" (this also holds for the 9th edition). We will cover most of Chapters 1-5 as an introduction to **Chemical Thermodynamics**.

0. Introduction to Physical Chemistry
1. The properties of gases
2. The First Law
3. The Second Law
4. Physical transformations of pure substances
5. Simple mixtures
17. Surface tension (handouts from new book)

**A detailed outline including material coverage dates can be found on the web, and is regularly updated.**

*Tips for success in Physical Chemistry*

1. Attend lectures - pay attention, make notes, ask questions.
2. Review notes soon after the lecture. Summarize each lecture, look for major concepts.
3. Download equation sheets, and use for working on problems.
4. Complete problem sets that are assigned each class. **Do not get behind** in completing problem sets, you will be overwhelmed by mid-term if you do this! Complete List A problems with the aid of the solutions manual, then try the List B problem!
5. Attend tutorials, complete problems assigned at tutorials.
6. Attend labs and complete in timely manner.
7. Check out animations on the website, visualize tricky concepts!
8. Arrange for consultation times for problems you do not understand.

***Important Dates -*** see website for the official list of dates

| Date | Event | Comment |
|---|---|---|
| Fri., Sept. 8, 2017 | First 59-240 Class | 12:30 p.m. CN G133 |
| Oct. 9-13, 2017 | Thanksgiving & Reading week | No classes |
| Wed. Oct. 18, 2017 | Mid-term #1 (20%) | In class - Location TBA |
| Wed., Nov. 15, 2017 | VW Deadline | |
| Mon. Nov. 20, 2017 | Mid-term #2 (20%) | In class - Location TBA |
| Wed., Dec. 6, 2017 | Last Day of Classes | |
| Fri., Dec. 15, 2017 | Final Examination (45%) | 12:00 - 3:00 p.m. |

Mid-term exams are 50-55 minutes in length. The final examination is three hours in length.

Students will have an opportunity to evaluate the course and professor within the final two weeks of lectures. Advance notice of this date will be given in class.

A **calendar for exams, labs and tutorials** is available on the website.

**Attendance of intro week and all laboratories is mandatory.** Official written documentation as to why a student misses a laboratory (e.g., medical reasons, etc.) must be provided, otherwise the student will not be able to reschedule sessions. and will receive a grade of zero for that laboratory. Your doctor must fill in the Faculty of Science Medical Certificate (available from the Chemistry website).

***Marking Scheme***

| **Mark Breakdown:** | | |
|---|---|---|
| Mid-term 1 | 20% | |
| Mid-term 2 | 20% | |
| Lab | 15% | |
| Final Exam | 45% | |

**All grades are numerical, from 0-100, as of Fall 2013.**

***Course regulations*** (All students must read this during the first week of term).

A. Attendance is VERY IMPORTANT to be successful in this course - students who do not attend lectures generally score very low on exams and assignments. **You must keep up with the material as the semester progresses.**

B. To arrange consultation time with Dr. Schurko, please **make an appointment using the Contact Page available on the website**. Office hours are flexible and will be adjusted around your schedule of classes and labs.

C. You MUST study outside of class. Outside work should include reading assigned material, doing assigned questions and problems, reviewing lecture notes, correcting errors made in past work, etc. For every 1 hour of lecture, 1-2 hours should be spent outside of class. **Physical chemistry requires study, practice and drill.**

D. Adequate lecture notes should be taken. These notes should be reviewed as soon as possible after each class meeting. The student is encouraged to consult with the instructor about any material that is unclear. Lectures are currently available on the web - modified versions should be available immediate prior to or after the lecture.

E. **Attendance of intro week and all laboratories is mandatory.** Official written documentation as to why a student misses a laboratory (e.g., medical reasons, etc.) must be provided **within 12 hours before or after the scheduled lab session**, otherwise the student will not be able to reschedule sessions. and will receive a grade of zero for that laboratory.

F. Exams missed due without an official excused absence will result in a grade of zero. Only students with an official excused absence will be given the opportunity to make-up an exam. If you cannot make an exam in the event of a religious holiday or University of Windsor athletic commitment, you must notify Dr. Schurko **by Sept. 15, 2017**. If for health or personal reasons an exam must be missed, you must notify Dr. Schurko **within 12 hours before or after the exam**, and you must have your physician fill out the Faculty of Science Medical Certificate (available from the Chemistry website).

G. All students are required to take the final examination in order to receive a passing grade in the course. No notebooks, texts or cheat sheets are allowed in any of the examinations. Students caught cheating will receive an **automatic grade of zero** on that test/exam and be **subject to academic discipline**.

H. Laboratory reports must be independently written. Students which deliberately copy answers, figures, charts or other materials from their partners or from old laboratories will receive an **automatic grade of zero** on the laboratory report and be **subject to academic discipline**.

By writing the examinations and laboratories in this course, you express consent with the above regulations and those written at the top of all examination papers.