

Instructor(s): Dr. Peng Zhang  
Email: peng.zhang@dal.ca  
Office: Chemistry 317

Lectures: Tuesday/Thursday 08:35-09:55  
Location: LSC C238

Laboratories: 4hr per week

Tutorials: N.A.

Course Description
The physical properties of chemical systems at the level of atoms and molecules are examined. Topics include the quantum mechanical description of atoms and molecules, chemical bonding, experimental and computational methods for studying molecular systems, and the kinetics of chemical processes.

Course Prerequisites
CHEM 1011.03/1012.03 or equivalent; MATH 1000.03 and MATH 1010.03 or equivalent (grade of C- or better). PHYC 1280.03/PHYC 1290.03 or PHYC 1300.06 is strongly recommended.

Course Objectives/Learning Outcomes
Students will learn some important concepts on chemical kinetics and the fundamental theory of quantum chemistry.

Course Materials
- “Physical Chemistry - Custom” (required), by Silbey, Wiley, 2013.
- Chem 2304 Website
Course Assessment

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight (% of final grade)</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>Lab</td>
<td>20%</td>
<td></td>
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<tr>
<td>Quizzes (x8)</td>
<td>16%</td>
<td>Jan.10, 17, 24, 31 Feb.7, 14, 28 Mar.7, 14, Apr.4, including 2 backup days (e.g. storm)</td>
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<tr>
<td>Term test 1</td>
<td>15%</td>
<td>Feb. 2 (to be confirmed)</td>
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<tr>
<td>Term test 2</td>
<td>15%</td>
<td>Mar. 9 (to be confirmed)</td>
</tr>
<tr>
<td>Final exam</td>
<td>34%</td>
<td>(TBA)</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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Other course requirements
Passing grade requirement: Quizzes + Tests + Exam: 40/80

Conversion of numerical grades to Final Letter Grades follows the [Dalhousie Common Grade Scale](#)

- A+ (90-100)
- B+ (77-79)
- C+ (65-69)
- D (50-54)
- A (85-89)
- B (73-76)
- C (60-64)
- F (<50)
- A- (80-84)
- B- (70-72)
- C- (55-59)

Course Policies

Exemption and Emergencies
If you are too ill to write a quiz, test or examination or complete an assignment in this class, please arrange for a medical certificate, as per the regulations in the University Calendar. Note that an exemption is granted only if a doctor’s medical note specifically states that the student is not recommended to take the test. If you are ill or experiencing an extreme personal emergency at the time of a test or an assignment, contact me in advance or email me to inform me of the situation. There will be no make-up quizzes or tests. In the case of an excused quiz/test, the % of the missing quiz/test will be added to the final exam correspondingly.

Course Content
- Fundamentals of chemical kinetics
- Applications of chemical kinetics
- Quantum theory
- Atomic structure
- Molecular bonding
- Spectroscopy

ACCOMMODATION POLICY FOR STUDENTS
Students may request accommodation as a result of barriers related to disability, religious obligation, or any characteristic protected under Canadian Human Rights legislation. Student Accommodation Policy: http://www.dal.ca/campus_life/student_services/academic-support/accessibility.html

Students who require accommodation for classroom participation or the writing of tests and exams should make their request to the Advising and Access Services Centre (AASC) prior to or at the outset of the regular academic year. More information and the Request for Accommodation form are available at www.dal.ca/access.

ACADEMIC INTEGRITY
Academic integrity, with its embodied values, is seen as a foundation of Dalhousie University. It is the responsibility of all students to be familiar with behaviours and practices associated with academic integrity. Instructors are required to forward any suspected cases of plagiarism or other forms of academic cheating to the Academic Integrity Officer for their Faculty.

Policy on Intellectual Honesty and Faculty Discipline Process: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

STUDENT CODE OF CONDUCT
Dalhousie University has a student code of conduct, and it is expected that students will adhere to the code during their participation in lectures and other activities associated with this course. http://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

COPYRIGHT
All members of the Dalhousie community are expected to comply with their obligations under Canadian copyright law. Dalhousie copyright policies and guidelines, including our Fair Dealing Guidelines, are available at http://www.dal.ca/dept/copyrightoffice.html.

SERVICES AVAILABLE TO STUDENTS
The following campus services are available to all Dalhousie students. Unless noted otherwise, the services are free.

<table>
<thead>
<tr>
<th>Service</th>
<th>Support Provided</th>
<th>Location</th>
<th>Contact</th>
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| General Academic Advising | Help with: understanding degree requirements and academic regulations; choosing your major; achieving your educational or career goals; dealing with academic or other difficulties | Killam Library Ground floor Rm G28 Bissett Centre for Academic Success | In person: Killam Library Rm G28 By appointment:  
  - e-mail: advising@dal.ca  
  - Phone: (902) 494-3077  
  - Book online through MyDal |
| Dalhousie Libraries | Help to find books and articles for assignments; Help with citing sources in the text of your paper and preparation of bibliography | Killam Library Ground floor Librarian offices | In person: Service Point (Ground floor) By appointment:  
  Identify your subject librarian (URL below) and contact by email or phone to arrange a time: http://dal.beta.libguides.com/sb.php?subject_id=34328 |
| **Studying for Success (SFS)** | Help to develop essential study skills through small group workshops or one-on-one coaching sessions  
Match to a tutor for help in course-specific content (for a reasonable fee) | Killam Library  
3rd floor  
Coordinator Rm 3104  
Study Coaches Rm 3103 | To make an appointment:  
- Visit main office (Killam Library main floor, Rm G28)  
- Call (902) 494-3077  
- e-mail Coordinator at: sfs@dal.ca  
- Drop in to see us during posted office hours  
**All information can be found on our website:**  
www.dal.ca/sfs |
| **Writing Centre** | Meet with a tutor to discuss writing assignments (lab report, research paper, thesis, poster)  
- Learn to integrate source material into your own work appropriately  
- Learn about disciplinary writing from a peer or staff member in your field | Killam Library  
Ground floor  
Learning Commons & Rm G25 | To make an appointment:  
- Visit the Writing Centre in the Killam Learning Commons (Rm G40) and book an appointment  
- Call (902) 494-1963  
- e-mail writingcentre@dal.ca  
- Book online through MyDal  
We are open six days a week  
**See our website:** writingcentre.dal.ca |