Faculty of Science Course Syllabus (Section A)
Department of Chemistry
Chem 2304.01
Introduction to Physical Chemistry II
Winter 2021

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

Lectures:      Tuesday/Thursday 08:35-09:55 (mixed asynchronous/synchronous)

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 Brightspace Website

Course Delivery (online)
- Recorded lectures will be posted on the course Brightspace website.
Course Assessment

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight (% of final grade)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Quizzes</td>
<td>25%</td>
<td>Weekly (in class) on every Tuesday</td>
</tr>
<tr>
<td>Term test 1</td>
<td>15%</td>
<td>Feb.9</td>
</tr>
<tr>
<td>Term test 2</td>
<td>15%</td>
<td>Mar.16</td>
</tr>
<tr>
<td>Final exam</td>
<td>25%</td>
<td>(TBA)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td></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 Content
- Fundamentals of chemical kinetics
- Photochemistry and catalysis
- Quantum theory
- Atomic structure
- Molecular bonding and spectroscopy

Faculty of Science Course Syllabus (Section B)
Chem 2304.01
Introduction to Physical Chemistry II
Winter 2021

University Policies and Statements
This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate

Missed or Late Academic Requirements due to Student Absence
As per Senate decision instructors may not require medical notes of students who must miss an academic requirement, including the final exam, for courses offered during fall or winter 2020-21 (until April 30, 2021).
Information on regular policy, including the use of the Student Declaration of Absence can be found here: https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html.

Academic Integrity
At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

Information: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility
The Advising and Access Services Centre is Dalhousie’s centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).

Information: https://www.dal.ca/campus_life/academic-support/accessibility.html

Student Code of Conduct
Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don’t follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can’t be reached, or would be inappropriate, procedures exist for formal dispute resolution.


Diversity and Inclusion – Culture of Respect
Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness.

Statement: http://www.dal.ca/cultureofrespect.html

Recognition of Mi’kmaq Territory
Dalhousie University would like to acknowledge that the University is on Traditional Mi’kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support.

Visit or e-mail the Indigenous Student Centre (1321 Edward St) (elders@dal.ca).

Information: https://www.dal.ca/campus_life/communities/indigenous.html

Important Dates in the Academic Year (including add/drop dates)
https://www.dal.ca/academics/important_dates.html

University Grading Practices
https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Student Resources and Support

Advising

General Advising: https://www.dal.ca/campus_life/academic-support/advising.html

Science Program Advisors: https://www.dal.ca/faculty/science/current-students/academic-advising.html

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Black Students Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html
International Centre: https://www.dal.ca/campus_life/international-centre/current-students.html

Academic supports

Library: https://libraries.dal.ca/

Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Studying for Success: https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Copyright Office: https://libraries.dal.ca/services/copyright-office.html


Other supports and services

Student Health & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness/services-support/student-health-and-wellness.html

Student Advocacy: https://dsu.ca/dsas


Safety

Biosafety: https://www.dal.ca/dept/safety/programs-services/biosafety.html

Chemical Safety: https://www.dal.ca/dept/safety/programs-services/chemical-safety.html

Radiation Safety: https://www.dal.ca/dept/safety/programs-services/radiation-safety.html

Scent-Free Program: https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html