

**UNIVERSITY OF CALGARY  
FACULTY OF SCIENCE  
DEPARTMENT OF CHEMISTRY  
COURSE OUTLINE  
FALL 2017**

**1. Course: CHEMISTRY 373, Physical Chemistry II: Quantum Mechanics and Symmetry**

LEC	DAYS	TIME	ROOM	INSTRUCTOR	OFFICE	PHONE	EMAIL	OFFICE HOURS
L01	TuTh	11:00-12:15	ST 147	Belinda Heyne	SB 419	403-220-3887	<a href="mailto:bjmheyne@ucalgary.ca">bjmheyne@ucalgary.ca</a>	TBA

Laboratory activities will begin on September 18, 2017.  
Tutorials will begin on the Week of September 11, 2017.

Desire 2 Learn (D2L) course name, CHEM 373 – Quantum Chemistry  
Departmental Office: Room SA 229, Tel: (403) 220-5341, e-mail: [chem.undergrad@ucalgary.ca](mailto:chem.undergrad@ucalgary.ca)

To avoid IT problems, it is recommended that the students use their U of C account for all course correspondence.

- 2. Prerequisites:** Chemistry 201 or 211, and 203 or 213; Physics 223; Mathematics 253 or 267 or 277 or 283 or Applied Mathematics 219 (<http://www.ucalgary.ca/pubs/calendar/current/chemistry.html#6525>).
- 3. Grading:** The University policy on grading and related matters is described sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Laboratory	30%
<b>In class</b> Midterm tests (2)	30% ( <b>Tuesdays: Oct. 17 and Nov. 21</b> )
Tutorial activity	5%
Final Examination	35% (To be scheduled by the Registrar)

The marks for each of the course components will be recorded as numerical scores and combined to arrive at a final numerical score, which will be converted to the letter grade that is reported to the Registrar.

**Approximate Grading Scale:**

<b>A+</b>	<b>A</b>	<b>A-</b>	<b>B+</b>	<b>B</b>	<b>B-</b>
92% - 100%	86% - 92%	82% - 85%	77% - 81%	72% - 76%	68% - 71%
<b>C+</b>	<b>C</b>	<b>C-</b>	<b>D+</b>	<b>D</b>	<b>F</b>
62% - 67%	58% - 61%	55% - 57%	52% - 54%	50% - 51%	< 50%

**Notes:**

Students will be expected to understand at every stage the material covered in all components of the course. In order to satisfy the prerequisite requirements (i.e., C-) for further Chemistry courses, a student must meet the following requirements: (1) **achieve a minimum 50% in the laboratory grading, AND (2) achieve a minimum 50% on the course theory** (Final examination + weighted average on the midterms).

This means that if a student scores below 50% in either the laboratory component or the examinations, then the *maximum* course letter grade they can obtain in CHEM 373 is a D+.

- 4. Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself with these regulations. See also [Section E.6](#) of the University Calendar.

There are no deferred Midterm/ term test examinations. In the event that a student misses the midterm or any course work due to illness then an official medical note will be required. Absences must be reported **within 48 hrs**. If a student misses the midterm for other reasons, then analogous documentation will be required. The course coordinator will need to see the original documentation (not electronic copy) for review / decision and keep it (or a copy) for their records. The documentation must be provided to the course coordinator **within 15 days** of the date of the midterm in order for an excused absence to be considered. If an excused absence is approved, then the percentage weight of a legitimately missed midterm examination *will be* transferred to the final examination (see [Section E.3](#) of the University Calendar).

If a student missed an experiment or a make-up lab for non-legitimate reasons (e.g. vacation, incomplete or insufficient score in pre-lab assignment), and did not perform the experiment, the contribution of that experiment in the final course grade will be zero.

5. **Scheduled out-of-class activities:** None  
**REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY.**
6. **Examination Policy:** All examinations will be closed book. Only **non-programmable calculators** (e.g., Casio FX260) are permitted for use during the exam components of the course. Students will also be permitted their own formula sheet, provided it doesn't contain labelling. Students should also read the Calendar, [Section G](#), on Examinations.
7. **Course Materials:** **OPTIONAL** *Physical Chemistry*, 3rd Edition, Thomas Engel and Philip Reid.
8. **Laboratory Information:** Laboratory activities will begin on **September 18, 2017**. It is mandatory that students wear a lab coat and safety glasses at all times when working in the lab. Students wearing inappropriate laboratory attire will not be permitted to conduct experiments for safety reasons. The manual can be found online (course D2L site). You must consult the online laboratory manual prior to attending any of your scheduled lab periods and printout the required portion of the manual that outlines the procedures you will be doing.  
Students repeating the course within the last two years can be exempted from the Laboratory Component of the Course if a grade of 75% or higher was obtained. The lab grade achieved on the previous attempt will be carried forward. Such students must contact the Chemistry Undergraduate Program Administrator in the Chemistry Main Office, SA 229 **before the drop date (September 22<sup>nd</sup>, 2017)**.
9. **Laboratory Safety Course:** All undergraduate students taking chemistry laboratories are required to complete an introductory course (approx. 50 minutes) on laboratory safety. This course is presented in an online format. The Safety Course must be completed before the first laboratory experiment. Students who do not complete the safety lessons will subsequently be denied admission to the laboratories. While it will not count directly to the final grade, the material is considered to be part of the course and is therefore appropriate for inclusion into laboratory pre-labs and exams. Students who have previously completed the Chemistry Safety Course at the University of Calgary in the past five years are NOT required to repeat it
10. **Approved Mandatory and Optional Course Supplemental Fees:**  
**Laboratory Breakage Fees and Locker Check-out:** The Department of Chemistry has a laboratory glassware breakage fee. At the start of the course, each student is assigned a locker and checks-in to establish that they have a complete set of usable glassware. By signing for check-in, a student agrees that they are now responsible for the glassware until check out. Any equipment that is missing, unusable or has been replaced during the semester will be charged to the student. All students, even those who withdraw early from the course must check out of the laboratory before the last day of lectures **December 8, 2017**. Any student who fails to check out before the last day of lectures for the term will be assessed a charge of \$30.00. If this fee is not paid by the payment deadline (Jan 31 for Fall courses, April 30 for Winter courses, July 15 for Spring courses), an additional \$10.00 administrative fee will be charged and university services (registration, transcripts, etc.) may be withheld.
11. **Writing across the curriculum statement:** "For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) will be a factor in the evaluation of those reports." See also [Section E.2](#) of the University Calendar.
13. **Reappraisal of Grades:** Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See [Section I.3](#) of the University Calendar.
  - (a) **Term work:** A student who feels that a piece of graded term work (term paper, essay, test, etc.) has been unfairly graded, may have the work re-graded. The student shall discuss the work with the Instructor **within 15 days** of either being notified about the mark, or of the item's return to the class. If not satisfied, the student shall immediately submit the *Reappraisal of Term work Grade* form to the Associate Head of Chemistry, Dr. Farideh Jalilehvand ([ahugchem@ucalgary.ca](mailto:ahugchem@ucalgary.ca)), who will arrange for a reassessment of the work if, and only if, the student's argument is valid. *Note:* Students should attempt to present their rationale as effectively and as fully as possible.

Mere dissatisfaction with a decision is not sufficient grounds for the appeal of a grade, or other academic decision. See sections [1.1](#) and [1.2](#) of the University Calendar.

- (b) **Final Exam:** A student wishing a reappraisal of the final grade should first attempt to review the final assessment with the department offering the course. If not satisfied, the student shall submit the request to the Enrolment Services. See [Section 1.3](#) of the University Calendar.

#### 14. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- (a) **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#) on Student Misconduct to inform yourself of definitions, processes and penalties. Examples of academic misconduct include but are not limited to: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also been submitted in another course without the instructor's knowledge; borrowing experimental values from others without the instructor's approval; falsification/ fabrication of experimental values in a lab report; copying materials from written or electronic resources; non-authorized recording of lectures.
- (b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).
- (c) **Academic Accommodation Policy:** Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities available at [http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities\\_0.pdf](http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.pdf). Students needing an Accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to their Instructor/ Course Coordinator. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than **14 days** prior to the date in question: <http://www.ucalgary.ca/pubs/calendar/current/e-4.html>
- (d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call (403) 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- (e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also <http://www.ucalgary.ca/secretariat/privacy>.
- (f) **Student Union Information:** VP Academic Phone: (403) 220-3911 email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca)  
SU Faculty Rep. Phone: (403) 220-3913 e-mail: [science1@su.ucalgary.ca](mailto:science1@su.ucalgary.ca), [science2@su.ucalgary.ca](mailto:science2@su.ucalgary.ca) and [science3@su.ucalgary.ca](mailto:science3@su.ucalgary.ca); Student Ombuds Office: (403) 220-6420 e-mail [ombuds@ucalgary.ca](mailto:ombuds@ucalgary.ca)  
<http://ucalgary.ca/provost/students/ombuds>
- (g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.
- (h) **U.S.R.I.:** At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses ([www.ucalgary.ca/usri](http://www.ucalgary.ca/usri)). Your responses make a difference - please participate in USRI Surveys.

Department Approval: Approved by Department Head

Date: September 6, 2017