



UNIVERSITY OF  
CALGARY

DEPARTMENT OF CHEMISTRY  
COURSE OUTLINE  
WINTER 2015

1. **Course:** Chemistry 701.19, Physical Chemistry in Biology

Lecture Sections:

L01:TuTh, 11:00-12:15, SB 329,  
Instructor Yujun Shi,  
Office SB329,  
Tel. No 220-6247,  
Email: shiy@ucalgary.ca  
Office Hours: TuTh, 2 - 3

- Departmental Office location, SA229,
- telephone number, +1 (403) 220-5341
- e-mail contact address [info@chem.ucalgary.ca](mailto:info@chem.ucalgary.ca)

2. **Prerequisites:** N/A

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:

**Letter grade assigned oral examination by the instructor**

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

5. **Scheduled out-of-class activities:** N/A

**REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY.** If you have a clash with this out-of-class-time-activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

6. **Course Materials:** *"Physical Chemistry with Applications to the Life Sciences" by David Eisenberg and Donald Crothers, Benjamin/ Cummings Publishing Co, Menlo Park, CA, 1979*

7. **Examination Policy:** Oral Examination

8. **Approved Mandatory and Optional Course Supplemental Fees:** N/A

9. **Writing across the curriculum statement:** N/A

10. **Human studies statement:** N/A

11. **OTHER IMPORTANT INFORMATION FOR STUDENTS:**

- (a) **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](#). Student Misconduct to inform yourself of definitions, processes and penalties

- (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 with documentable disabilities are referred to the following links: [Calendar entry on students with disabilities](#) and [Student Accessibility Services](#).
- (d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 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: 220-3911 Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca).  
SU Faculty Rep. Phone: 220-3913 Email: [sciencerep@su.ucalgary.ca](mailto:sciencerep@su.ucalgary.ca); [Student Ombudsman](#)
- (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) 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: January 9 2015

**Chemistry 701.19 (Physical Chemistry in Biology)**

Course Reference book, "Physical Chemistry with Applications to the Life Sciences", by Eisenberg and Crothers.

The proposed topics include material from the following chapters:

- 1) Description of Macroscopic systems
- 2) Energy and the first law of Thermodynamics
- 3) Entropy and the Second law of thermodynamics
- 4) Free Energy and equilibrium
- 5) Biological applications of thermodynamics
- 6) Chemical and Biochemical Kinetics
- 9) Electrochemical Equilibria
- 10) Biochemical Spectroscopy
- 14) Statistical Mechanics
- 15) Transport Processes