



UNIVERSITY OF CALGARY

DEPARTMENT OF CHEMISTRY COURSE OUTLINE WINTER 2017

1. COURSE: CHEMISTRY 613, Fundamentals of Electrochemistry

LEC	MEETING TIME	ROOM	INSTRUCTOR	OFFICE	PHONE	EMAIL	OFFICE HOURS
L01	Mon 3:00-4:15 Wed 1:30-2:45	ES656	Dr. Viola Birss	ES656	220-6432	birss@ucalgary.ca	TBA

Departmental Office: SA 229, 403-220-5341, chem.undergrad@ucalgary.ca

2. PREREQUISITES: Chem 201 or 211, and 203 or 213, and consent of the Department.

(<http://www.ucalgary.ca/pubs/calendar/current/chemistry.html#6529>)

3. GRADING: 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:

Assignments	40%
Class participation	5%
Term paper	15%
Oral presentation	10%
Final take home exam	30% Due April 26, 2017 (last day of exams)

Each piece of work submitted by the student will be assigned a percentage score, as provided by the individual supervisor. The student's percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade. The conversion between course percentage and letter grade is given below:

Grading Scale:

A+	A	A-	B+	B	B-
100% - 95%	94% - 85%	84% - 80%	79% - 75%	74% - 70%	69% - 65%
C+	C	C-	D+	D	F
64% - 60%	59% - 55%	54% - 50%	49% - 45%	44% - 40%	< 40%

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).

5. Textbook: *not applicable*

6. Writing: For all components of the course, the quality of the student's writing in any written work will be a factor in the evaluation. See also [Section E.2](#) of the University Calendar.

7. **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), 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 rational 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 [I.1](#) and [I.2](#) of the University Calendar.
- (b) **Final Exam:** A student wishing a reappraisal of the final grade should contact the instructor. If not satisfied, the student shall submit the request to the Enrolment Services. See [Section I.3](#) of the University Calendar.

8. 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 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. Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Chemistry, Dr. Farideh Jalilehvand, by email ahugchem@ucalgary.ca or phone (403) 220-5353.
- (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 (FOIPPA). 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.
SU Faculty Rep. Phone: 220-3913 Email: 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). Your responses make a difference - please participate in USRI Surveys.

Department Approval: Approved by Department Head

Date: January 21, 2017

Assistant Dean's Approval for

Alternate final examination arrangements: Approved by Assistant Dean

Date: January 23, 2017

OUTLINE :

1. Origin of electrode potentials, measurement of potentials, reference electrodes.
2. Current/voltage relationships based on activation and transport control, Butler-Volmer relationship, Tafel plots, reaction mechanisms, etc.
3. Electrochemical Measurements (instruments, techniques, etc)
4. Interpretation of literature data (topics to be covered depend on time remaining and on student interests).