



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF CHEMISTRY
COURSE OUTLINE

1. **Course:** CHEM 331, Inorganic Chem:Main Group Element -- Fall 2018

| Instructor Name | Email | Phone | Office | Hours |
|--|---------------------|----------------|--------|--|
| <i>L01:</i> (MWF 13:00 - 13:50 in ST 141) | | | | |
| Roland Roesler | roesler@ucalgary.ca | (403) 220 5366 | SB 339 | Mo 11:00 - 12:00; We 14:00 - 15:00. |

Course Site:

D2L: CHEM 331 L01-(Fall 2018)-Inorg Chem:Main Group Elements

Department of Chemistry:

Office: Science A 229

Phone: 403 220-5381

Email: chem.info@ucalgary.ca

Note:

Students must use their U of C account for all course correspondence.

2. **Requisites:**

See section [3.5.C](#) in the Faculty of Science section of the online Calendar.

Prerequisite(s): Chemistry 201 or 211 and 203 or 213.

3. **Grading:**

The University policy on grading and related matters is described in [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 Experiments | 25% | |
| e-learning (clickers) | 10% | |
| Midterm Tests (2) in class | 20% | Oct 5:10% & Nov 9: 10% |
| Final Examination | 45% | Scheduled by the Registrar |

The marks for each of the course components will be recorded as a numerical score and combined as shown above to arrive at the total numerical score which will then be converted to a letter grade to be reported to the Registrar. A mark of less than 50% in the laboratory component and/or on the weighted average of the term tests and final examination will result in a final grade of no greater than D+, which does not satisfy the pre-requisite requirements for further chemistry courses. Students will be expected to understand at every stage the material covered in all components of the course.

The midterm examinations and the final are comprehensive, examining all material taught until the date of the respective exam. A higher percentage obtained in the final examination will automatically replace a lower percentage obtained in one or both midterm examinations (e.g. Midterm I 80 %, Midterm II 64%, Final 73% will be calculated as Midterm I 80 %, Midterm II 73%, Final 73%). Students need to attempt both midterm examinations in order to be eligible for this boost.

Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component 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 a percentage grade and letter grade is as follows.

| | A+ | A | A- | B+ | B | B- | C+ | C | C- | D+ | D |
|--------------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Minimum % Required | 95 - 100 % | 90 - 94 % | 85 - 89 % | 80 - 84 % | 75 - 79 % | 70 - 74 % | 65 - 69 % | 60 - 64 % | 55 - 59 % | 50 - 54 % | 45 - 49 % |

This course has a registrar scheduled final exam.

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/themselves with these regulations. See also [Section E.3](#) of the University Calendar.

For midterms/ term tests or any other course work, absences must be reported **within 48 hrs** to the Course coordinator/instructor. For absences due to illness, the Physician/Counsellor statement form will be required <https://www.ucalgary.ca/registrar/student-forms>. If a student misses the course work for other reasons, then analogous documentation will be required. The course coordinator/instructor 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/instructor **within 15 days** of the date of the midterm/ term tests/ course work in order for an excused absence to be considered.

5. Scheduled out-of-class activities:

There are no scheduled out of class activities for this course.

6. Course Materials:

Recommended Textbook(s):

Gary L. Miessler, Paul J. Fischer, Donald A. Tarr, *Inorganic Chemistry, Fifth Edition (2014)*.: Pearson .

7. Examination Policy:

Special Needs students must be registered with Student Accessibility Services (see Section 11(c) below), and must identify themselves to their instructor as soon as possible.

During exams students are allowed to bring only pencils, pens, erasers, their ID card, a model kit and a non-programmable calculator. If in doubt, check your calculator with your instructor prior to the exam (the programmable TI calculators from high school are not acceptable).

Students should also read the Calendar, [Section G](#), on Examinations.

8. 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 7, 2018). 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 last day of the final examination period of the term, an additional \$10.00 administrative fee will be charged and university services (registration, transcripts, etc.) may be withheld.

9. 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.) can be a factor in the evaluation of the work. See also [Section E.2](#) of the University Calendar.

10. Human studies statement:

See also [Section E.5](#) of the University Calendar.

11. Reappraisal of Grades:

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. 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.

1. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **15 days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall immediately submit the Reappraisal of Graded Term work form to the department in which the course is offered. The department will arrange for a re-assessment of the work if, and only if, the student has sufficient academic grounds. See sections [1.1](#) and [1.2](#) of the University Calendar
2. **Final Exam:** The student shall submit the request to Enrolment Services. See [Section 1.3](#) of the University Calendar.

12. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, [Mental Health Services Website](#)) and the Campus Mental Health Strategy website ([Mental Health](#)).
- b. **SU Wellness Center:** The Students Union Wellness Centre provides health and wellness support for students including information and counselling on physical health, mental health and nutrition. For more information, see www.ucalgary.ca/wellnesscentre or call [403-210-9355](tel:403-210-9355).
- c. **Sexual Violence:** The University of Calgary is committed to fostering a safe, productive learning environment. The Sexual Violence Policy (<https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>) is a fundamental element in creating and sustaining a safer campus environment for all community members. We understand that sexual violence can undermine students' academic success and we encourage students who have experienced some form of sexual misconduct to talk to someone about their experience, so they can get the support they need. The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (svsa@ucalgary.ca) or phone at [403-220-2208](tel:403-220-2208).
- d. **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](#). Student Misconduct to inform yourself of definitions, processes and penalties. Examples of academic misconduct may include: 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 permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. **These are only examples.**
- e. **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).
- f. **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 [procedure-for-accommodations-for-students-with-disabilities.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 the Associate Head of the Department of Chemistry, Dr. Farideh Jalilehvand by email ahugchem@ucalgary.ca or phone [403-220-5353](tel:403-220-5353). 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. See [Section E.4](#) of the University Calendar.
- g. **Safewalk:** Campus Security will escort individuals day or night (See the [Campus Safewalk](#) website). Call [403-220-5333](tel:403-220-5333) for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- h. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). 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 [Legal Services](#) website.

- i. **Student Union Information:** [VP Academic](#), Phone: [403-220-3911](#) Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: [403-220-3913](#) Email: sciencerep@su.ucalgary.ca. Student Ombudsman, Email: suvpaca@ucalgary.ca.
- j. **Internet and Electronic Device Information:** Unless instructed otherwise, cell phones should be turned off during class. All communication with other individuals via laptop, tablet, smart phone or other device is prohibited during class unless specifically permitted by the instructor. Students that violate this policy may be asked to leave the classroom. Repeated violations may result in a charge of misconduct.
- k. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction ([USRI](#)) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

13. Laboratory Information

Laboratory activities will begin the week of September 10, 2018. 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.

14. **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.

Department Approval:

Electronically Approved

Date: 2018-09-07 14:18

Course Outcomes

- Describe the structure and bonding in inorganic and organometallic compounds of Groups 3 - 12 elements using advanced bonding theories
- Understand the symmetry of chemical species and apply it to interpret and make predictions regarding vibrational spectra and molecular orbital diagrams
- Discuss the bonding, structure and properties of crystalline solids
- Make educated predictions regarding the chemistry of compounds of Groups 1, 2, and 13-18 elements
- Identify applications of Groups 1, 2, and 13-18 elements and their compounds and correlate properties with applications
- Conduct laboratory experiments in synthetic inorganic chemistry following simple procedures, and communicate the results in laboratory reports