

REVISED COURSE OUTLINE FOR REMOTE LEARNING

To account for the necessary transition to remote learning from March 13 onward, adjustments have been made to assessment deadlines and requirements so that all coursework tasks are in line with the necessary and evolving health precautions for all involved (students and staff). If you are unable to meet the deadlines or requirements specified, please connect with your course instructor to work out alternative dates/assessments.

1. Course: CHEM 655, Advanced Organic Synthesis - Winter 2020

Lecture 01: TR 11:00 - 12:15 - Remote Learning (check with your instructor or coordinator for details)

| Instructor | Email | Phone | Office | Hours |
|----------------|--------------------|--------------|--------|-------|
| Dr Thomas Back | tgback@ucalgary.ca | 403 220-6256 | SB 217 | TBA |

Course Site:

D2L: CHEM 655 L01-(Winter 2020)-Advanced Organic Synthesis

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):

Consent of the Department.

BSc in Chemistry or special approval from the Instructor and/or the Department of Chemistry

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:

| Component(s) | Weighting % |
|---------------|---------------------------------------|
| Assignment(s) | 50% |
| Midterm exam | 15% (Wednesday, Feb 26, 7-9 pm) |
| Final exam | 35% (Saturday April 18, 12:00-3:00pm) |

The final exam will be held at the same time (Saturday, April 18, 12:00 pm) as originally scheduled by the registrar and will count for 35% of the grade. Students may write the exam at home or in another location of their choice. The exam itself will be e-mailed to students at the start (12 pm) and students will have 24 hours in which to submit their answers (i.e. until 12:00 pm on April 19th). Marks will be deducted for late answers. Upon completion students should scan their answers and send them to tgback@ucalgary.ca by e-mail. If a student does not have access to a scanner, please alert the instructor at least two weeks before the exam and alternative arrangements will be made.

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 | 93 % | 82 % | 77 % | 68% | 60% | 50 % | 48 % | 46% | 44% | 42 % | 40 % |

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. Any grade below B- (50%) is a failure in a graduate course.

The midterm exam will be held on Wednesday, February 26 from 19:00-21:00 in ST 063.

The assignment will be due on the last day of lectures.

4. Missed Components Of Term Work:

The University has suspended requirements for students to provide evidence for reasons for absences so please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations. Please let your instructor know immediately if you are ill and cannot meet the deadlines specified.

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. Scheduled Out-of-Class Activities:

The following out of class activities are scheduled for this course.

| Activity | Location | Date and Time | Duration |
|--------------------|----------|---|----------|
| CHEM 655 Term Test | ST 063 | Wednesday, February 26, 2020 at 7:00 pm | 2 Hours |

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY. If you have a conflict with the out-of-class-time-activity, please contact your course coordinator/instructor no later than **14 days prior** to the date of the out-of-class activity so that alternative arrangements may be made.

6. Course Materials:

There is no single text book; reading material will be assigned throughout the course. See also the list of Supplementary Reading Material on the Course Syllabus.

7. Examination Policy:

: All examinations will be closed book. Only molecular model kits are permitted during examinations in this course No electronic devices, books, notes etc. will be permitted. Students should also read the Calendar, [Section G](#), on Examinations.

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8. Approved Mandatory And Optional Course Supplemental Fees:

There are no mandatory or optional course supplemental fees for this course

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.

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10. Human Studies Statement:

Students will not participate as subjects or researchers in human studies.

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.

- a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **ten business 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 submit the Reappraisal of Graded Term work form to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections [I.1](#) and [I.2](#) of the University Calendar
- b. **Final Exam:** The student shall submit the request to Enrolment Services. See [Section I.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. 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](#) 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: suvpac@ucalgary.ca. SU Faculty Rep., Phone: [403-220-3913](#) Email: sciencerep@su.ucalgary.ca. [Student Ombudsman](#), Email: ombuds@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.
- l. **Copyright of Course Materials:** All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or [non-academic misconduct](#), in addition to any other remedies available at law.

Course Outcomes:

- Advanced coupling methods for creating C-C and C-heteroatom bonds, often using transition metal catalysts, as applied to complex target molecules.
- Tactics for predicting and controlling chemo- and regioselectivity.
- Control of stereoselectivity with an emphasis on enantioselective synthesis.
- Practical considerations: cost, green reagents, atom economy, reactions in aqueous media, minimizing the number of steps and judicious and minimal use of protecting groups.
- Towards the end of the course, each student is required to submit an assignment on the design of an original total synthesis of a stereochemically complex organic product that presents challenges such as hindered or strained features, as well as multiple rings, heteroatoms and functional groups. This requires an advanced level of understanding of the strategies and tactics in synthesis, and the assignment is worth 50% of the final grade.
- The expected overall outcome of the course is that students will be prepared to undertake projects in graduate studies where organic synthesis is required, and eventually to work in the pharmaceutical, biotech, agrichem and fine chemical manufacturing industries.

Electronically Approved - Mar 23 2020 15:30

Department Approval

Associate Dean's Approval for alternate final examination arrangements or remote learning and out of regular class-time activity