



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF CHEMISTRY
COURSE OUTLINE
FALL 2015

1. **Course:** Chemistry 453, Advanced Organic Chemistry

Lecture Sections:

L01: MWF 11:00-11:50, SB 144

Instructor: Dr. T. Sutherland, Office: SB 220, Tel: 403 220 7559, email: todd.sutherland@ucalgary.ca
Office Hours: TBD

Laboratories: See your timetable, start first week of classes.

Desire 2 Learn (D2L) course: Chemistry 453 – Advance Organic Chemistry

Departmental Office location: SA 229, Tel: 403 220 5351, e-mail: info@chem.ucalgary.ca

2. **Prerequisites:** Chemistry 351 and one of Chemistry 353 or 355. [Link](#)

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 experiments	30%
Midterm test	25% (November 4, 7-9pm)
Final Examination	45% (To be scheduled by the Registrar)]

The marks for each of the course components will be recorded as numerical scores and combined as shown above to arrive at the total numerical score (we don't round) and then be converted to the letter grade that will be reported to the Registrar. In assigning the final course letter grade, the following scale will be used (e.g. A- starts at 80%, A at 85%):

A+	95	A	85	A-	80	B+	75	B	70	B-	65	C+	60	C	55	C-	50	D+	45	D	40	F
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Notes:

- (1) A minimum 50% on the laboratory **is required** in order to satisfy the prerequisite requirement (*i.e.* C-) for further Science courses.
- (2) **Either** a minimum 50% on the Final examination **or** a minimum 50% weighted average on the examinations (MT & FIN) **is required** in order to satisfy the prerequisite requirement (*i.e.* C-) for further Science courses.
- (3) Notes (1) and (2) mean that if a student scores below 50% in **either** the laboratory **or** the examination component, then the *maximum* course letter grade they can obtain in Chem 453 is a D+.
- (4) Students who have taken this course before at the University of Calgary *may* have the option to opt out of the laboratory component. If a student wishes to exercise this option, they *must* complete the arrangements with the Chemistry Undergraduate Program Coordinator (SA 229) *before* the end of the first week of classes.

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.

Deferred examinations will ONLY be provided for the Final Examination and then only with the approval of the Associate Dean.

In the event that a student misses the midterm due to illness, then a medical note will be required. If a student misses the midterm for other reasons, then analogous documentation will be required. The Chem 453 course coordinator will need to see the original documentation 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 granted and the MT course marks to be transferred to the Final examination. If no such documentation is provided within this period then a grade of zero will be assigned to the midterm.

5. **Scheduled out-of-class activities: 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. The **CHEM 453 MIDTERM** will be held on the **EVENING of NOVEMBER 4th 2015, 7:00-9:00pm.**

If you have a conflict with the scheduled Chem 453 Midterm time, please inform the course coordinator and *provide a copy of your schedule* (preferably by email to facilitate a reply *etc.*) as soon as possible but a minimum of ten days in advance of the midterm date so that an ALTERNATE examination time can be arranged for you. See note in section 4 about deferred examinations.

If another class has an out of class course activity, such as a midterm, that conflicts with any part of your Chem 453 (lecture, laboratory or tutorial) then **they** are **required** to make alternate arrangements that fit your schedule so you must contact that course coordinator for them to make those required alternate arrangements.

6. **Recommended Course Materials:**

M. Jones, S.A. Fleming, "Organic Chemistry", Norton 4th ed. 2010 or 5th ed. 2014
Chemistry 453 Laboratory Manual (online in D2L site)
A self-duplicating Laboratory Notebook

7. **Examination Policy:** All examinations are closed book. Model kits and non-programmable calculators are allowed, a periodic table and spectroscopy data tables will be provided if required. **No other aids** including any form of "cheat" or "data" materials. Wireless devices and other electronic devices are not allowed. Students should also read the Calendar, [Section G](#), on Examinations.
8. **Approved Mandatory and Optional Course Supplemental Fees:** 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. 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:** In this course, the quality of the student's writing in laboratory reports will be a factor in the evaluation of those reports." See also [Section E.2](#) of the University Calendar.

10. **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](#). 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. Ashley Causton, 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 (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

SU Faculty Rep. Phone: 403 220-3913 Email: science1@su.ucalgary.ca, science2@su.ucalgary.ca and science3@su.ucalgary.ca;

Student Ombuds Office: 403 220-6420 Email 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). Your responses make a difference – please participate in USRI Surveys.

Lecture topics: Hückel MO theory. Molecular mechanics principles. Frontier MO interactions and their application to: electrocyclic reactions, cycloadditions, sigmatropic rearrangements. Woodward-Hoffmann rules for pericyclic reactions. Photochemistry. Reactive intermediates (carbocations, free radicals, carbanions, carbenes and nitrenes, as time permits). Methods for studying reaction mechanisms.

Laboratory Experiments: Modeling organic structures and reactions using molecular mechanics and MO methods. Synthetic projects designed to illustrate basic principles: Synthesis of Azulene. Photochemical Synthesis of Benzopinacol. Chemiluminescence. Research project combining both experimental and theoretical approaches: Resolution of Racemic Ibuprofen.

Department Approval: Approved by Department Head

Date: July 8, 2015

Associate Dean's Approval for
out of regular class-time activity: Approved by Associate Dean

Date: August 26, 2015