

- to predict the chemo-, regio-, and stereoselectivities for reactions covered in class. (Basic to intermediate level)
- to explain the chemo-, regio-, and stereoselectivities for reactions covered in class. (Basic to intermediate level)
- to use reactions to design a synthesis. (Basic level)

ACCESSIBILITY: In order to make the course more accessible, I am committed to reducing barriers that students might have. This will be done using multiple ways to ensure inclusion. Students who know that this course might offer challenges are invited to contact me to discuss their concerns and the possible means and strategies that can be applied to attain the objectives stated previously. However, if you require that an accommodation plan be established to help reduce the barriers you face as a result of a disability condition (including mental health conditions as well as chronic and temporary medical conditions) then you are requested to meet with the Access Centre for Students with Disabilities in a timely fashion.

ACSD Contact information: acsinfo@concordia.ca; 514-848-2424 ext. 3525; SGW Campus, Hall Building, H-580

TEXTBOOKS: There is a coursepack required for the theory section of the course: Organic III: Organic reactions. You can buy a hard copy or a digital copy, both available at the bookstore. It is also assumed that you have access to a standard textbook of organic chemistry, such as Organic Chemistry by Jones, Bruice, or any other ones. If you want an accessible e-course pack, you must first purchase a hard copy of the course pack at the bookstore, and then contact Stephanie Wells from ACSD. She will give you a link/copy of the accessible version (you must provide proof of purchase to her).

A laboratory textbook "**Operational Organic Chemistry, a problem-solving approach to the laboratory course**" Lehman, John W. 4th Edition, Prentice Hall, 2009 must also be purchased from the University Bookstore.

EXAMINATIONS:

There will be **FIVE** formal examinations:

1. A bonus test on **MOODLE, 40 minutes** for 20 multiple choice questions
It must be done between September 15 18h30 and September 18 18H30
2. Test 1 in **CLASS designed for 45 minutes but will last 1H15 minutes** for 3 questions on:
October 18, 2017 (Review and pericyclic reactions)
3. Test 2 in **CLASS designed for 45 minutes but will last 1H15 minutes** for 3 questions on:
November 15, 2017 (Organometallics and acetylide)

If a student is absent from the tests, he/she must produce a written excuse appropriately signed (i.e. by a doctor, or an employer) on the appropriate letterhead paper. This letter must be delivered to the instructor. The Department determines the validity of the absence. If there is no valid excuse, the student will receive a mark of zero for the test. There is no makeup test. In case of a valid excuse, percentage grade is transferred unto the final exam.

4. A final examination, between December 6 and December 20 2017, arranged by the Examinations Office.
5. A laboratory exam on **MOODLE, 30 minutes** for 10 multiple choice questions and 5 short answer questions. It must be done between November 24 18H30 and November 27 18H30.

Surprise quiz:

5 or 6 surprise quizzes will be given during the term. Each of them will include 1 or 2 simple questions related to previous week's material. Students will have between 5 and 10 minutes to complete the quiz. No surprise quiz will be given during the lecture before or after a test. The worst grade will be dropped in

order to count the best 4 or 5 grades. Attendance will be judged on the number of quizzes completed. If you feel that the format of the quiz will not give you a fair opportunity at showing your knowledge, speak with the professor.

COURSE GRADE:

The final grade of the course is based on the marks obtained in the examinations, assignments and the laboratory marks. The composition of the final grade is as follows:

Surprise quiz (best 4-5 out of 5-6)	10%
Attendance	5%
Tests	25%
Final exam	35%
Lab report	15%
Lab examination	10%

	100%
Bonus test	+5%

Separate minimum passing marks are required for theory (weighted average of 2 tests, final exam, attendance and surprise quizzes), for lab (weighted average of lab report and lab exam) and for lab exam. Minimum passing marks for lab exam and theory is 50% (D) and for lab is 60% (C-).

Letter grades will be assigned according to the following criteria:

A+: 90.00-100.00	A: 85.00-89.99	A-: 80.00-84.99
B+: 76.67-79.99	B: 73.33-76.66	B-: 70.00-73.32
C+: 66.67-70.00	C: 63.33-66.66	C-: 60.00-63.32
D+: 55.00-60.00	D: 50.00-55.00	F: see previous paragraph

LABORATORY INFORMATION: Laboratory Coordinator: Ms Rita Umbrasas, SP-330.01, Tel. 848-2424 ext. 3354, Email: rita.umbrasas@concordia.ca Chem. 324 Laboratories are located at SP-112.

Laboratories start the week of Monday, September 11, 2017. All students must attend the section for which they are registered during this week.

Laboratory performance is graded based on the quality of the experimental work, the laboratory reports and a laboratory exam.

Do not expect a particular laboratory experiment to be directly related to the material covered in the lectures of the preceding week. **CONSIDER THE LABORATORY WORK AS AN INDEPENDENT AND ADDITIONAL LEARNING EXPERIENCE.**

LABORATORY MANUAL & MATERIALS: There is a lab manual for CHEM 324 and laboratory textbook "**Operational Organic Chemistry, a problem-solving approach to the laboratory course**" Lehman, John W. 4th Edition, Prentice Hall, 2009. They may be purchased from the University Bookstore, as are other items such as lab coats and safety glasses which are mandatory. You also need to buy a lab note book: **STUDENT LAB NOTEBOOK-CARBONLESS** from the bookstore.

LAB CONTENT: The laboratory component of the course is divided into 6 experiments and 1 tutorial spread over 11 weeks.

1. Nucleophilic Substitution of 2,4-Dinitrochlorobenzene (1 week)
2. Kinetic versus Thermodynamic Control in Competing Reactions (2 weeks)
3. Using the Chemical Literature in an Organic Synthesis (Library Visit) (1 week)
4. Synthesis of 7,7- Dichloronorcarane using a phase transfer catalyst (1 week)
5. Preparation of the Insect Repellent N,N-Diethyl-m-Toluamide (2 weeks)
6. Synthesis of Dimedone and Measurement of its Tautomeric Equilibrium Constant (1.5 weeks)

7. Effect or Reaction Conditions on the Condensation of Furfural with Cyclopentanones (2.5 weeks)

The objective of the first three experiments/tutorial is to get yourself familiarize with the laboratory basic procedures, the library and online searches, and the proper way to write a laboratory report; all of this within an organic chemistry framework. The subsequent experiments (4-7) are touching on more advanced techniques, or topics related to the theory of the course or with important techniques and concepts in organic chemistry.

LABORATORY INSTRUCTORS (TEACHING ASSISTANTS): Each laboratory section will have one demonstrator who is a graduate student. You must learn and record the name and coordinates of your teaching assistant.

MANDATORY QUIZ AND SEMINAR

As part of this course, you are *required* to i) attend a Chemistry and Biochemistry Departmental Seminar on the academic conduct code and the appropriate use of information sources and ii) pass the online quiz associated with this seminar (the passing grade for the quiz is 100%). (**Note:** This is **not** the University's quiz you may have been asked to take when you first registered and logged into the myConcordia portal; the one you must take is similar, but graded by the Department of Chemistry and Biochemistry, and you do not have access to it until after you have attended the seminar.) The aim of this seminar is to clarify the academic conduct code in terms of what practices will be considered unacceptable with regards to work submitted for grading in Chemistry and Biochemistry courses. **You are only exempt from repeating the seminar and the quiz if you have done both in Fall 2012 or more recently,*** otherwise you are required to repeat both this term. This short seminar (1 hour) will be held at the following times (note that late-comers will not be admitted):

Date	Time	Place
Monday, Sept. 25	16:45-17:45	CC-111
Tuesday, Sept. 26	16:45-17:45	CC-111
Wednesday, Sept. 27	16:45-17:45	CC-111
Wednesday, Sept. 27	20:45-21:45	SP-S110
Thursday, Sept. 28	16:45-17:45	CC-111
Thursday, Sept. 28	20:45-21:45	HB-130
Friday, Sept. 29	16:45-17:45	CC-111

As space for each of the seminars is limited by the room size, please sign up to your preferred time. Sign-up sheets are available outside SP 201.01 (Departmental office).

If you do not complete this course requirement, your final grade for the course may be lowered by one full letter grade with an incomplete (INC) notation until such time as this requirement is completed. Please refer to the undergraduate calendar (section 16.3.6) for details on removal of an incomplete notation.

* You are exempt if you can locate your ID in the pdf file located on the Departmental web site (<http://www.concordia.ca/content/dam/artsci/chemistry/docs/compliance-list.pdf>).

PLAGIARISM AND OTHER FORMS OF ACADEMIC DISHONESTY

The Academic Code of Conduct can be found in section 17.10 of the academic calendar (<http://www.concordia.ca/academics/undergraduate/calendar/current/17-10.html>). Any form of unauthorized collaboration, cheating, copying or plagiarism found in this course will be reported and the appropriate sanctions applied. The mandatory seminar is a clear and fair opportunity to learn what our

faculty regards as academic misconduct. Failure to take part in this learning opportunity and thus ignorance of these regulations is no excuse and will not result in a reduced sanction in any case where academic misconduct is observed.

COURSE NUMBER & SECTIONS: Make it a point to remember the *course number*, your *lecture section number* and your *lab section number* for the duration of the course. This information will be required frequently later when you have to fill in your answer books during examinations and when submitting lab reports, etc., to ensure that your grades are correctly recorded.

LAB EXEMPTIONS: Students, who are repeating the course, having passed the lab component within the past two (2) years, may be eligible for a lab exemption. Applications for the exemption (forms available in SP201.01) must be completed by the end of the first week of term (*i.e.* prior to the start of the laboratory); late applications will not be accepted. Signed and completed forms are to be returned to Hilary Scuffell, (SP 275.01). Students **MUST** register for the appropriate lab exemption lab/tutorial section; students registered in any other lab/tutorial sections will be required to complete the lab portion of the course (NO EXCEPTIONS).

COURSE WITHDRAWALS: Students who withdraw from the course must also check-out from their laboratory section. Only those students registered in the course may attend the laboratory and receive a grade for lab work.

Examinations	Quiz	Test 1	Test 2	Final	Example 1	Example 2
Know the structure and explain the reactivity of different functional groups (Intermediate to advanced level)	Yes	Yes (1)	No	Yes (2)	Sample Test 1 Question 3	Sample Final Questions 4 and 7
Draw the mechanism for different types of reactions. (Basic to advanced level)	Yes	Yes(1)	Yes (1)	Yes (4-5)	Sample Test 1 Questions 1 and 2	Sample Final Questions 2, 9, 10, 11, and 12
Predict the chemo-, regio-, and stereoselectivities for different types of reactions. (Basic to intermediate level)	Yes	Yes(1)	Yes (1)	Yes (4-5)	Sample Tests 2 Question 2	Sample Final Questions 5,8, 9, 10, and 12
Explain the chemo-, regio-, and stereoselectivities for different types of reactions. (Basic to intermediate level)	Yes	Yes(1)	Yes (1)	Yes (3-5)	Sample Test 1 Question 2	Sample Final Questions 2, 9, 10, 11, and 12
Use reactions to design a synthesis. (Basic to intermediate level)	Yes	No	Yes (1)	Yes (2-3)	Sample Tests 2 Question 1	Sample Final Questions 1,3, and 6