GENERAL INFORMATION

Organic Structure and Stereochemistry (CHEM 325) is a one-term course required for all degree programmes in chemistry and biochemistry. CHEM 325 requires CHEM 222 (Introductory Organic Chemistry II). This one-term organic chemistry course will introduce you to principles of stereochemistry and their relevance to physical properties and reactivities of organic compounds.

INSTRUCTORS
Professor Heidi M. Muchall
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Tel. 848-2424 x3342
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Professor Louis Cuccia
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louis.cuccia@concordia.ca

COURSE FORMAT
Lectures and Laboratory

LECTURE HOURS
Thursday 18:00 - 20:30

LOCATION
LOY CC-115

Recommended

TEXTBOOK

COURSE WEBSITE
Muchall: http://faculty.concordia.ca/muchall/chem325/
Cuccia: Moodle

OFFICE HOURS
Muchall: Wednesday 10:00 - 11:00, plus drop-in “anytime”
Cuccia: Wednesday 9:00 - 11:00, plus drop-in “anytime”

COURSE WITHDRAWAL

Students who withdraw from the course must also check-out from their lab section. Only students registered in the course may attend the lab and receive a grade for lab work. **Sunday, March 13, 2016 is the last day for academic withdrawal from winter-term courses.**

LECTURES, READING AND MOLECULAR MODELS

Classroom time is divided between lectures and practice sessions. The lectures are designed to reinforce and clarify textbook material. The practice sessions reinforce the covered material.

It is impossible to describe and explain everything you will learn in this class during the lecture period. **But: there is no one suitable textbook for CHEM 325!** The basic Eliel is too extensive, Buxton too short. A combination of both is suggested for this course. A list of further textbooks that are available in the library, some of which have been put on reserve, is provided on the website and you should familiarize yourself with several. Suggested reading is also provided on the website. Come to class prepared: complete reading the relevant textbook material before the lecture. Take lecture notes and work through them after the lecture. Re-read the textbook material and add key ideas to your notes. Here is something you might want to try: keep a CHEM 325 journal: write a few lines on a topic covered in class right after the relevant lecture. The idea is this: just because I might be able to explain well does not mean so can you without practice. You need practice in it, and writing those few lines is the first step in that practice! If you leave it too long, the “links” your brain created during my explanations in the lecture will be gone!

Stereochemistry is a 3-D subject. Build molecular models for a better understanding! You need to find a molecular model set you are comfortable with; different model sets are available from the University Bookstore.

COURSE OBJECTIVES

To provide students with an introduction to symmetry.

To raise students' awareness for the three-dimensional properties and behaviour of molecules.
CHEM 325

COURSE OUTLINE

1  Stereoisomerism - history, identification & nomenclature
2  Configurational Analysis
3  Asymmetric Induction
4  Stereoselective Synthesis (tentatively set for the last class on April 7, 2016)

Section 1 will be taught by Dr. Cuccia (January 7 to February 18) and sections 2 to 4 by Dr. Muchall (February 18 to April 7). A detailed list for Sections 2 and 3 can be found at http://faculty.concordia.ca/muchall/chem325/.

EXAMINATIONS

There will be four (4) formal examinations:

1. In-class Exam 1 on Section 1 (Cuccia) on February 18, 2016.
2. In-class Lab Exam on March 31, 2016 (see below).
3. In-class Exam 2 on Sections 2 & 3 (Muchall) on March 31, 2016.
4. Cumulative Final Exam after the end of classes, arranged by the Examinations Office.

If you are absent from an in-class examination, you 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 as soon as possible but no later than one (1) week after the Exam. The Department determines the validity of the absence. A make-up exam will only be offered for the Lab Exam, and only if the absence is valid. If you lack an excuse or if your excuse is not valid, you will receive a mark of zero for the Exam. In case of a valid absence for in-class exams 1 and/or 2, the final course grade will be based solely on the marks obtained in the other exams and in the lab.

PROBLEM SETS

There will not be formal problem sets or assignments. However, problem sets from previous years and their answers are posted on the course website (Muchall: http://faculty.concordia.ca/muchall/chem325/; Cuccia: Moodle). Work through the problems and pay particular attention to how the information is given in the answers.

LABORATORY INFORMATION

The Laboratory Coordinator is Mrs. Rita Umbrasas, SP 330-1, Tel. 848-2424 x3354. All questions on matters related to the labs should be addressed to her.

CHEM 325 Laboratories are located at SP 112. Laboratories start the week of Monday, January 11, 2016. All students must attend the section for which they are registered during this week and a copy of documentation of enrolment in that section must be submitted to the demonstrator or staff member on duty. Changes will be considered only in exceptional circumstances (e.g. course conflict). All requests for changes must be made to Mrs. Umbrasas.

The laboratories are supposed to enhance the lecture material and provide hands-on experience. Do not expect a particular laboratory experiment to be related directly to the material covered in the lectures. Laboratory performance is graded on the quality of the experimental work, the reports and the final lab exam.

FINAL LABORATORY EXAM

Your lab knowledge will be tested in a written lab exam. The exam will be given in a lecture period on March 31, 2016. The passing mark for the lab exam is 50 %. You will receive an R as course grade should your lab exam be below 50 %. A passed lab exam counts for 10 % of the final grade. The lab exam is an integral part of the laboratory portion of CHEM 325. As such, it is linked to the labs, i.e., the lab exam will be written in the term the lab is taken.
LABORATORY MANUAL

The lab manual is

Organic Structure and Stereochemistry, Department of Chemistry and Biochemistry.

The manual is available from the University Bookstore, as are other items such as lab coats and safety glasses, which are mandatory.

LABORATORY EXEMPTION

If you are repeating the course and have passed the lab component within the past two (2) years, you may request a lab exemption. Applications for the exemption (form available in SP 201.01) must be completed by the end of the first week of term, no later than 5:00 pm, Friday, January 8, 2016. Late applications will not be accepted. Signed and completed forms must be returned to Mrs. Hilary Scuffell, SP 275.01. You must register for the appropriate lab exemption section (56); if you are registered in any other lab section, you will be required to complete the lab portion of the course. If you apply late or are denied exemption, you must repeat the lab portion. Partial exemptions will not be given, in particular, lab (reports) and lab exam are linked. If an exemption is granted, your previous lab mark (lab reports and lab exam) will be carried forward.

LABORATORY INSTRUCTORS (DEMONSTRATORS)

Each laboratory section will have one or two demonstrators who are graduate students or staff members of the department. You must know their names and the location of their rooms. You will need to contact them later for matters related to your labs.

ACADEMIC INTEGRITY (Source: http://www.concordia.ca/students/academic-integrity.html)

Go to the link above and familiarize yourself with what you are supposed to do and what you are supposed to avoid doing.

The most common offense under the Academic Code of Conduct is plagiarism, which the Code defines as “the presentation of the work of another person as one's own or without proper acknowledgement.”

“Work” here could be material copied word for word from books, journals, internet sites, professor's course notes, etc. It could be material for which the words have been changed but whose phrasing still closely resembles that of the original source. It could be the work of a fellow student, e.g., a lab report completed by another student, or unauthorized data for a lab report. It could be a paper purchased through one of the many available sources. “Plagiarism” does not refer to words alone – it also refers to images, graphs, tables and ideas. “Presentation” is not limited to written work. It also includes computer and artistic works. Finally, if you translate the work of another person into English and do not cite the source, this is also plagiarism.

The Academic Code of Conduct can be found in section 17.10 of the undergraduate calendar (http://www.concordia.ca/academics/undergraduate/calendar/current/17-10.html). Any form of cheating, unauthorized collaboration, copying or plagiarism found in this course will be reported and the appropriate sanctions applied.

As part of CHEM 325, you are required to attend a seminar and pass a quiz on avoiding plagiarism and other forms of academic dishonesty, offered by the Department of Chemistry and Biochemistry. If you have already attended the seminar and achieved 100% (110 points) on the quiz within the past five (5) years (i.e. Winter 2011 or more recently), you have fulfilled the requirement. The aim of the seminar and quiz is to clarify which practices are considered unacceptable by the Department of Chemistry and Biochemistry. The seminar will be offered during the third week of classes (see the appendix for the times offered); the quiz is online, can be accessed through the MyConcordia portal (click on Powered by Moodle under Course Websites and choose CHEM 101 under Specialized Chemistry Sites; not possible through the guest login!) and can be taken from after the seminar up to the deadline announced on the CHEM 101 site, but preferably as soon as possible. If you do not attend the seminar and/or do not pass the quiz (the passing mark is 100%), your course grade will be lowered by one full letter grade with an incomplete (INC) notation. Please refer to the academic calendar section 16.3.6 on how to remove the INC and restore the proper course grade.
COURSE GRADE
The final grade of the course is based on the marks obtained in the examinations and the laboratory, which includes the lab exam. The composition of the final course grade is as follows:

- In-class Exams 1 and 2 50 % (25 % each)
- Final Exam 25 %
- Lab Mark 25 % (10 % lab exam, 15 % lab reports)

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

Separate minimum passing marks are required for the lectures (weighted average) and the laboratory (weighted average). The minimum passing mark for the lecture part is 50 % (D–), for the lab part 60 % (C–). The Minimum passing mark for the lab exam is 50 % (see above). The grading scheme (percentage to letter grade) follows:

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H.M. Muchall, L. Cuccia
December 2015

Appendix

Seminar on academic conduct

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<thead>
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<th>Date (Winter 2016)</th>
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To make sure we have the proper room size, please sign up outside SP 201.01 (Departmental office).