Chemistry 2500: Organic Chemistry I
Fall 2017

Professor: Dr. P. G. Hayes
Office: E870
E-mail: p.hayes@uleth.ca
URL: http://people.uleth.ca/~p.hayes/
Phone: (403) 329-2313
Office Hours: 11:00–13:00 Wednesdays (or by appointment)

Class URL: http://people.uleth.ca/~p.hayes/Chem%202500%20Web%20Page%202017/index.htm

- Easily accessed by via the "Courses" tab of my personal site: http://people.uleth.ca/~p.hayes/

Email: Due to the complex nature of the subject, it is not possible to properly answer questions about course material via email. Thus, all such inquiries should be made in person. Only emails of an administrative nature (*e.g.* exam absence, appointment set-up, *etc.*) will receive responses. Grades will not be given out by email.

Credit Hours: 3.0

Pre-requisites: Chemistry 2000. Students who lack the proper pre-requisites will be automatically removed from the course on Tuesday, September 12, 2017.

Substantially Similar: Chemistry 2120. Student cannot receive credit for both Chemistry 2120 and Chemistry 2500.

Course Subject: CHEM 2500 is the first half of a full year course in organic chemistry. Introduction to the chemistry of carbon: nomenclature; structure, bonding, conformation and stereochemistry; reaction mechanisms; substitution and elimination reactions.

Lectures: Section A: MWF at 10:00 – 10:50 in C674
Section B: TTh at 10:50 – 12:05 in C610

Labs: The laboratory portion of the course is compulsory and commences Monday, September 11th. **Both the lab and lecture portions of the course must be passed independently (*i.e.* A good lab mark cannot raise a failing lecture grade).** The details of the laboratory policies and operation will be addressed at that time. The laboratory manual contains information pertinent to the laboratory which you must read. It is a requirement that all students wear a lab coat, safety glasses (contact lenses beneath safety glasses are not acceptable), adequate footwear (sandals are not permitted) and have fully covered legs (shorts and skirts and not permitted). A deposit of $15.00 is required in order to obtain a locker key. Please pay at the cashier's office and bring the token to the laboratory. Lab books and coats can be purchased at the university book store. Please ensure that these details are dealt with prior to the beginning of your first lab period. Refer to the lab manual for complete details on these and other topics relating to the laboratory component of Chemistry 2500 – any questions should be addressed to the laboratory coordinator, Mr. Kris Fischer (fiscke@uleth.ca, E830 University Hall).

Attendance Policy: Attending the laboratory component of this course is mandatory, and you will be assigned a grade of 0 for any lab missed without a valid reason. Since all experiments must be completed to pass CHEM 2500, an unexcused laboratory absence could result in course failure. Please see your lab manual for the correct protocol to make up a lab that was missed due to illness, etc. It is strongly recommended that you attend the lectures as all material discussed in lectures is examinable, and not all course material is covered in the text. *Students who do not attend class regularly and punctually tend to fail this course.*

Special Needs Students: Please contact the Accommodated Learning Centre (B760) to arrange for accommodations at least one week prior to any evaluation. Also, feel free to inform Prof. Hayes of your special needs in order for you to have a productive learning experience.

Exams: Midterm: Friday, October 27th (17:00 – 19:00) in PE250

Final: Saturday, December 9th (14:00 – 17:00)
(*N.B.* Tentative only – confirm time and location with registrar's office)

Note: As stated in the 2017/2018 University of Lethbridge calendar (Pg. 75), failure to attend an exam without a valid reason (*e.g.* illness) will earn a grade of 0. Proof of illness requires presentation of an appropriately signed medical certificate. Notify Prof. Hayes **as soon as possible** if you are going to miss an exam. ***If any course component is missed for a valid reason, that portion of the course grade will be shifted to the final examination.***

IMPORTANT NOTE: Exams will cover all course material including demonstrations, practice problems and assigned readings up to the end of the preceding lecture unless otherwise stated. They are **cumulative** covering all material presented in lecture, assignments, etc. up to that point in the semester. Assignments and suggested problems are intended as partial preparation for exams. Failure to put forth effort is perilous.

Text Books:

- William Ogilvie, Nathan Ackroyd, C. Scott Browning, Ghislain Deslongchampss, Felix Lee and Effie Sauer, *Organic Chemistry: Mechanistic Patterns*, Nelson Education Ltd., Toronto, 2018. ISBN: 978-0-17-650026-9, [QD251.3.Q45 2017].
- James W. Zubrick, *The Organic Chem Lab Survival Manual, A Student's Guide to Techniques, 9th Ed.*, John Wiley & Sons, New York, 2012. ISBN: 978-1-118-08339-0, [QD261.Z83 2012].
    - This book is also available as an e-book from the University Book Store for approximately half the price of the hardcopy.

Additional Useful Materials:

- It is highly recommended that students obtain a molecular model kit. These kits are permitted for all assignments and exams. Model kits can be purchased from the Chemistry and Biochemistry Undergraduate Society (Contact Dr. Patenaude in E782 – $30.00). In addition, the University Book Store sells a more expensive, alternate model kit (~$80.00).

Course contents (may be subject to change)

Chapter	Topic
1-2	Review: Drawing Organic Molecules and Functional Groups
2.5, 4	Nomenclature and Isomers
3-4	Stereochemistry and Conformations of Organic Molecules
1.9, 9	Bonding: MO Theory and Aromaticity
N/A	Types of Organic Reactions
6-8	Operational Species: Nucleophiles, Electrophiles, Acids, Bases and Leaving Groups
11	Substitution Reactions (S_N1 and S_N2) and Kinetics
12	Elimination Reactions (E1 and E2)

Practice Problems: The textbook and the website both contain supplementary practice problems. It is in your best interest to practice as many problems as possible throughout the semester. Additionally, 10% of your final mark will come from completing weekly online (Sapling) assignments. The assignments and problem sets are meant to help prepare you for exams. It is virtually impossible to succeed in an organic chemistry course without working on problems consistently throughout the term. Cramming does not work in this discipline!

Evaluation Mechanisms:

- Laboratory (30%). Note: *All experiments must be performed (and submitted before the end of the course) in order to pass the lab, and hence, the course*. A grade of 50% constitutes a lab pass.
- Online Sapling Assignments (10%)
- Midterm Exam (20%)
- 1 Final exam (40%)

Note: For students who earn a higher grade on the final exam than the midterm, an alternative grading scheme will be utilized wherein the midterm exam will carry a weight of 0% and the final exam 60%.

Sapling Online Assignments: Dr. Susan Findlay, E786, susan.lait@uleth.ca; (403) 317-5044

How to Register for Sapling Online Assignments:

1. Go to http://saplinglearning.ca **NOTE:** Make sure to enter .ca, NOT .com
2. If you already have a Sapling Learning account, log in, click "View Available Courses", then skip to step 6.*
3. Otherwise, click “Create account” located under the Login box.
4. Choose a username and password, and supply the other requested information. Click "Create my new account".
5. Check your email (and spam filter) for a message from Sapling Learning. Click on the link provided in the email.
6. Find “University of Lethbridge – CHEM 2500 – Fall17 – HAYES) and click the link.
7. Click the button that says "Send payment via Paypal or Credit Card" and follow the remaining instructions.**
8. Once you have registered and enrolled, you can log in at any time to complete or review your assignments.

9. If you have any problems, visit https://community.macmillan.com/community/digital-product-support/college-students-support-community or https://community.macmillan.com/docs/DOC-6915-students-still-need-help

*If you completed Sapling for CHEM 2500 in a previous semester (*i.e.* if you were not dropped from Sapling for a refund), you can contact Sapling support (see step 9) to be unenrolled from the old course in exchange for free enrollment in this semester's course. Old Sapling grades will NOT be reused; you must do THIS semester's assignments.

** The University Bookstore also sells cards with Sapling access codes. Since online prices are in US$, this may be a cheaper option, depending on the exchange rate. **Note that you have to follow the instructions that the bookstore gives you on how to "cash in" the code you buy for one that you can use in Sapling.**

How to Use Sapling:

Once you have registered your account, you can get started using the system. A training assignment is available to introduce you to the system if you have not used Sapling before. An additional training assignment shows how to answer question types specific to organic chemistry. The first graded assignment is due on Sunday, September 17th at 23:55. Subsequent assignments will also be due on Sunday nights at 23:55 (usually one assignment per week). This does not mean that you should wait to do the assignments on Sunday! If you want to leave your weekend free, finish the assignment during the week. Each assignment has been calibrated to take approximately an hour for the average student who understood the lectures and has already done the Exercises posted on the class website. If you tend to work slowly, expect that the assignments may take you longer than that. They can typically be completed more quickly if you've prepared/studied before starting the assignment.

1. Go to http://saplinglearning.ca
2. Enter your Username and Password then click "GO".
3. Click on the assignment you want to work on. This will bring up the first question in the assignment. They can be done in any order; use the "map" icon to navigate the assignment if you want to work on questions out-of-order. There is no need to submit the Assignment as a whole once you've finished all questions.

New assignments will appear approximately once a week. Unless you are otherwise informed, there is one assignment due every Sunday night. All assignments are weighted equally, and if an assignment is broken into parts "a" and "b" (e.g. HW1A and HW1B), each part is considered to be half an assignment and is weighted accordingly. No credit is given for late assignments. No extensions will be granted for any reasons other than those which would merit an exemption from a midterm exam (documented illness, etc.).

Schedule for Sapling Assignments:

Assignment	**Due Date**
Training Assignments (not for credit)	N/A
HW1: Drawing and Classifying Organic Molecules	Sun., Sept. 17
HW2: Isomers and Nomenclature	Sun., Sept. 24
HW3: Stereochemistry	Sun., Oct. 1
HW4: Conformations of Organic Molecules	Sun., Oct. 15
HW5: Molecular Orbital Theory and Aromaticity	Sun., Oct. 22
HW6: Reaction Types and Factors Favouring Reactivity	Sun., Oct. 29
HW7: Reaction Mechanisms and Acidity (pKa values)	Sun., Nov. 5
HW8: Substitution Reactions of Alkyl Halides	Sun., Nov. 19
HW9: Substitution Reactions of Alcohols	Sun., Nov. 26
HW8: Elimination Reactions	Sun., Dec. 3

**The deadline for all assignments is 23:55 on the date listed

Calculator Policy:

- While calculations are not the primary focus of Organic Chemistry, you may still need a calculator capable of simple algebra. You will be informed prior to each test whether or not you should bring your calculator. You are not allowed to store/download text to your calculator. Any calculators found to be in violation of this policy during a test will be confiscated along with the test paper; this is cheating and will be dealt with as such. **CALCULATORS WITH WIRELESS COMMUNICATION CAPABILITIES ARE STRICTLY FORBIDDEN.**

Plagiarism & Cheating:

If caught cheating on any component of Chemistry 2500 (including Sapling online assignments) you be assigned a grade of F for the course. A letter describing the offense will be placed in your student file. Two such letters is grounds for expulsion from the university.

STUDENTS WHO CHEAT, CHEAT THEIR FELLOW STUDENTS BY DEVALUING THEIR HARD WORK, EARNED GRADES AND DEGREE. If you see someone cheating during an exam, inform the proctor in the following way: 1) Write a message on your exam paper indicating what is happening and where. 2) Raise your hand and the proctor will come over -- point out your note. The proctor will take it from there. It is often pointless to report cheating after the event.

What is plagiarism? Plagiarism is defined as the taking of someone's thoughts, writings or inventions and using them as one's own.

When writing a paper or lab report on a given topic, you must read up on the topic, get the necessary information and then present it IN YOUR OWN WORDS. If you use a sequence of text verbatim (*i.e.* exactly) from someone else's work, THAT IS A QUOTE and must be cited (to give proper credit to the author). If you use an idea or data from someone else's work, then that work must be cited specifically as a reference, and/or in your paper's bibliography. Beware of information that is found on the web -- it is rarely primary source information and is generally not acceptable (*i.e.* Wikipedia!)

IF, IN THE COURSE OF WRITING A REPORT, YOU EXECUTE A CUT AND PASTE FROM A WEBSITE OR OTHER SOURCE (without a citation) YOU HAVE COMMITTED PLAGIARISM.

It is important to point out that there is a difference between working out answers to an assignment or a lab report with a friend and plagiarism. If, after conferring with others, what you write down is based on your own understanding of the material and **is in your own words**, then that is acceptable. If, however, you look at a friend's answer to a question, and then simply write (essentially) the same thing on your assignment (a mental cut and paste), then you have committed plagiarism (even if a few words, structures, etc. were changed). Similarly, **IF TWO OR MORE STUDENTS TURN IN IDENTICAL REPORTS/ASSIGNMENTS, THAT IS PLAGIARISM.** Accordingly, you must take care when you share work that you have completed with other students. If they take your material and plagiarize it, you are all subject to disciplinary action. If you have completed a course and loaned marked material from it to someone who is currently taking it, you will be called upon to explain your actions if this material is plagiarized. This also applies to taking marked course material and making it generally available as in a website.

Online assignments are used for assessment in this course. Once again, the answers you provide for such assessments must be your own. Under no circumstances should you obtain or provide any information pertaining to questions or answers on the Sapling assignments to other students.

PLAGIARISM IS CHEATING and is subject to discipline as described in the university calendar. If you are unclear about any aspect of the student discipline policy for academic offences, refer to Pages 69-71 of the 2017/2018 University of Lethbridge calendar.