



**School of Arts & Science**  
**CHEMISTRY AND GEOSCIENCE DEPARTMENT**

**CHEM 231-001**  
**Organic Chemistry 2**  
**2007P Spring Term**

## COURSE OUTLINE

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The Approved Course Description is available on the web @ [Camosun.bc.ca](http://Camosun.bc.ca)

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Please note: this outline will be electronically stored for five (5) years only.  
It is strongly recommended students keep this outline for your records.

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### 1. Instructor Information

(a)	Instructor:	Horace Luong		
(b)	Office Hours:	M-F 12:30 pm -4:30 pm		
(c)	Location:	F346C		
(d)	Phone:	250-370-3513	Alternative Phone:	250-516-1796
(e)	Email:	<a href="mailto:luongh@camosun.bc.ca">luongh@camosun.bc.ca</a>		
(f)	Website:	<a href="http://Chem231.blogspot.com">Chem231.blogspot.com</a>		

### 2. Intended Learning Outcomes

(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)

Upon completion of this course the student will be able to:

1. Utilize the specialized vocabulary and nomenclature based on the IUPAC system for organic compounds including aldehydes, ketones, benzene & its derivatives, carboxylic acids and their derivatives, amines, and carbohydrates according to their structures and functional groups present.
2. Compare and contrast the general physical properties such as stability, acidity and basicity, melting and boiling point, and water solubility.
3. Describe the chemical properties of the above classes of organic compounds, and relate any differences and similarities.
4. Draw a synthetic route outlining the preparation of some of the compounds above and their reactions, including details such as stereochemistry of selected reactions and mechanisms, stability of transition states, intermediates, products, and factors affecting the outcome.
5. Utilize the concepts of functional group transformations and reaction mechanisms to explain organic reactions.
6. Demonstrate an ability to use the method of retrosynthetic analysis to interconvert the above classes of organic compounds.
7. Communicate an understanding of the phenomena of proton and carbon-13 nuclear magnetic resonance spectroscopy and to interpret and predict the spectroscopic data for the classes of organic compounds listed above.

### 3. Required Materials

(a)	Texts	(1) John McMurry: <i>Organic Chemistry</i> , <b>Sixth</b> Edition. (2) Rin Raap and Nasr Khalifa: <i>Organic Chemistry Experiments for Chemistry 230 and 231</i>
(b)	Other	

### 4. Course Content and Schedule

(Can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)

#### 1. General Information

##### 1.1 Introduction

This course is a continuation of Chem 230 and includes topics in alcohols, aromatic compounds, aldehydes and ketones, carboxylic acids and derivatives, amines, amino acids, peptides, and carbohydrates. Chem 231 is an eight-week long course comprised of three two-hour lectures a week (9:30-11:30 am in room F302) on Monday, Wednesday and Friday as well as two three-hour laboratory sessions (8:30-11:30 am) on Tuesday and Thursday (F354). It is anticipated that the students will work at least 10 hours/week outside of class time on the material covered in class.

##### 1.2 Other Course Details

- Course prerequisite classes: Chem 121 and Chem 230.
- Credits: 4
- Prior Learning Assessment Available
- There is an on-line blog (<http://chem231.blogspot.com>) where you can post questions and make comments. Horace will also be posting announcements on this site, so check regularly.
- Horace's office hours are M-F 12:30 pm – 4:30 pm in room 346C (unless told otherwise). However, feel free to drop by any time F 346C to ask questions or make comments. Sending an e-mail to arrange a time for meeting is also appreciated.

##### 1.3 Required Texts for the Course

- (1) John McMurry: *Organic Chemistry*, **Sixth** Edition.
- (2) Rin Raap and Nasr Khalifa: *Organic Chemistry Experiments for Chemistry 230 and 231*

#### 2. The Laboratory

##### 2.1 Laboratory Rules

All persons in the laboratory must wear safety or prescription glasses at all times (sunglasses are not acceptable). This is for your safety and those who repeatedly violate this rule will be expelled from the laboratory for that day and lose credit for the experiment. Lab coats are recommended although they must be worn if you expose your mid-drift. Sandals should not be worn in the lab.

The students should come into the lab prepared to do the experiment. To properly prepare yourselves, you should **read** the appropriate pages for that week's experiment and devise a **flowchart** for the procedure.

##### 2.2 Laboratory Grading

Each experimental write up is worth 10 marks and is due one week at the beginning of the lab section after the completion of the experiment. For every day that the report is late you will lose 10% of the highest value to a maximum of 4 days.

If you miss a lab due to illness, then Horace will need an original medical certificate of illness or bereavement from a licensed physician to excuse you from the lab, otherwise a mark of 0 will be given for that particular experiment.

If you have passed the lab component of this course in the past, please see Horace to apply the lab credit.

### 3. Grading Scheme

In order to pass the course, a pass in both the lecture and laboratory section must be achieved.

#### 3.1 Tests

The tests will be closed book and you are responsible for the material covered in class as well as in the sections assigned in your textbook.

Test	Date	Chapters from textbook (subject to change)
1	May 17	17, 18
2	May 31	19, 15
3	June 14	16, 20, 21

If a test is missed then the overall marking scheme will be adjusted so that there is more weight put onto the other two tests (13% each) and the final examination (44%).

#### 3.2 Final Examination

The final examination will cover **ALL** course material. It can only be written if a passing grade on lab marks is achieved.

Students who are ill for the final examination must produce a medical certificate and a makeup examination for these cases will then be arranged.

#### 3.3 Mini Bonus Assignment

I would like to see the students apply what they have learned from the concepts of the course to the real world. For a maximum of 2 bonus marks (if two articles are done), I would like the student to find a recent article (from newspapers, journals, magazines, etc. within the past decade) dealing with some practical aspect of organic chemistry. I expect at least a two page write-up (double spaced) describing the general chemistry in each the article (please include a copy of the article). Do consult with Horace before settling on the topic. It is anticipated that there will be no duplicates within the group.

You must include a complete reference section as to where the article was attained from and any books that you may have used to help write the article. Try to include as much organic chemistry related to the class material as you can.

Chem 231 Lecture and Laboratory Schedule: (Spring 2007) (subject to change): May

Monday	Tuesday	Wednesday	Thursday	Friday
7 Alcohol	8 Expt. 10	9 Alcohol	10 No lab. Lecture (8:30-10:20) - Ether	11 Epoxides
14 Aldehydes/Ketones	15 Expt. 14	16 Aldehydes/Ketones	17 Test 1 (2.5 hrs)	18 Benzene
21 Victoria Day	22 Expt. 12	23 Benzene	24 Expt. 17	25 Benzene
28 Spectroscopy	29 Lab on Spectroscopy I	30 Carboxylic acids	31 Test 2( 2.5 hrs)	

Chem 231 Lecture and Laboratory Schedule: (Spring 2007) (subject to change):

June

Monday	Tuesday	Wednesday	Thursday	Friday
				1 Carboxylic acids
4 Carboxylic acids	5 Expt. 15	6 Carboxylic acids	7 Spectroscopy II (worth 2 labs, due Friday (8) 9:30 AM)	8 Enolate
11 Enolate	12 Expt. 19	13 Enolate	14 Test 3 (2.5 hrs)	15 Amines/Carbohydrate
18 Carbohydrate	19 Expt. 20	20 Carbohydrate	21 Lecture/Review	22 Lecture/Review Bonus Assignments Due

## 5. Basis of Student Assessment (Weighting)

(Should be linked directly to learning outcomes.)

(a)	Lab Experiments	30%
(b)	Term Tests	3 x 10%
(c)	Final Exam	40%
(d)	Bonus Assignment	2%

## 6. Grading System

(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)

### Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
95-100	A+		9
90-94	A		8
85-89	A-		7
80-84	B+		6
75-79	B		5
70-74	B-		4
65-69	C+		3
60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

### Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at [camosun.ca](http://camosun.ca) or information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description

<b>I</b>	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
<b>IP</b>	<i>In progress:</i> A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
<b>CW</b>	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy E-1.5 at **camosun.ca** for information on conversion to final grades, and for additional information on student record and transcript notations.

## 7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

### LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services or the College web site at [camosun.ca](http://camosun.ca).

### STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services and on the College web site in the Policy Section.