CAMOSUN COLLEGE
School of Arts & Science
Department of Chemistry & Geoscience

CHEM-230-D01 (A and B)
Organic Chemistry 1
Winter 2021

COURSE OUTLINE

The course description is online @ http://camosun.ca/learn/calendar/current/web/chem.html

Ω *Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.*

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1. Instructor Information

(a) Instructor	Dr. Ryan Fradette		
(b) Office hours	Virtual: Monday, Thursday 9:30-10:30am, Wednesday 1-2pm via collaborate		
(c) Location			
(d) Phone		**Alternative:**	
(e) E-mail	fradetter@camosun.bc.ca		
(f) Website	D2L		

2. Intended Learning Outcomes

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 alkanes, cycloalkanes, alkenes, alkynes, alcohols, ethers, epoxides, and alkyl halides according to their structures and functional groups present.
2. Describe the general physical properties such as stability, acidity and basicity, density, melting and boiling point, and water solubility of the above compounds.
3. Describe the chemical properties of the above classes of organic compounds, and explain any differences and similarities.
4. Draw a synthetic scheme outlining the preparation of some of the compounds above and their subsequent reactions, including details such as stereochemistry of some typical 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 apply the method of retrosynthetic analysis based on the knowledge of some general organic reactions of the above compounds.
7. Identify the fundamental differences among the three types of isomerism: structural, geometric, and stereo.
8. Recognize and draw Newman, Fischer, and Haworth projections.
9. Communicate an understanding of the Cahn-Prelog-Ingold sequence rules and to recognize basic differences between enantiomeric and diastereomeric compounds.
10. Communicate an understanding of the phenomena of infrared, ultra violet-visible, and mass spectroscopy and to interpret and predict the spectroscopic data for the classes of organic compounds listed above.

3. Required Materials

Textbook:

Organic chemistry Mechanistic patterns, Ogilve 1st edition – Includes etext $110

The standalone etext is listed as:
Mobius IAC for Organic Chemistry 1e (24 MTHS ACCESS) $80

The etext is not a requirement, so a used hardcopy of the textbook would also be suitable

Other:

Scientific Calculator

I use a Sharp EL-531, but any scientific calculator will be suitable

Technology

The following link discusses technology requirements
http://camosun.ca/services/orientation/online-learning.html

For this class you will need:

A computer that can run a word processing program
Office 365 for PC or Mac which contains is free for Camosun students, link:
http://camosun.ca/services/its/other-services.html

Smartphone scanning app (or desktop scanner)
I use Scannable or Camscanner apps both are freely available and allow you to scan and submit handwritten work as a PDF file

If you find yourself struggling with any aspect of the technology used in this course, please do not hesitate to ask me. I might not always be able to solve your problem, but in those rare cases I can point you in the right direction

Recommended

A molecular model kit, they are available to borrow from the library, but should you want to have your own the 'molymod' kits that are available for loan (or similar) are what I recommend

4. Course Content and Schedule

Week # (Week of)	**Monday** (Seminars) 4:30-5:20	**Tuesday** (Seminars) 4:30-5:20	**Wednesday** (D2L Quizzes) 3:30-8:00pm	**Thursday** (Lab) 4:30-5:20	**Friday** BACON Due 4pm
1 (Jan 11)	Course Intro	Chapter 1	*Attendance Due*		
2 (Jan 18)	Ch 1	Ch 2			
3 (Jan 25)	Ch 2	Ch 2 EDO I		Lab 1 EA	Bacon 1
4 (Feb 1)	Ch 3	Ch 3	***Quiz 1***	Lab 2 TLC *Lab 1 due*	
5 (Feb 8)	Ch 4	Ch 4	*EDO I due*	Lab 3 IR *Lab 2 due*	Bacon 2
6 (Feb 15)	*Reading week*	*Reading week*	*Reading week*	*Reading week*	*Reading week*
7 (Feb 22)	*Ch 4 Lab 2 due*	Ch 5	***Quiz 2***	Lab 4 ee *Lab 3 due*	
8 (Mar 1)	Ch 5	Ch 6		Lab 5 extraction *Lab 4 due*	Bacon 3
9 (Mar 8)	Ch 6	Ch 7	***Quiz 3***	*Lab Exp 5 due*	
10 (Mar 15)	Ch 7	Ch 7 EDO II			Bacon 4
11 (Mar 22)	Ch 8	Ch 8	***Quiz 4***		
Week 12 (Mar 29)	Ch 8	Ch 19/11	*EDO II due*		*College closed*
Week 13 (April 5)	Ch 11	Ch 12	***Quiz 5***		Bacon 5
Week 14 (April 12)	Ch 12	Ch 12			Bacon 6

Lecture Topic Outline: (See D2L for full reading list)

1. **Carbon and its compounds introduction (Chapters 1)**
2. **Functional groups, physical properties, and nomenclature (Chapter 2)**
3. **Conformational analysis (Chapter 3)**
4. **Stereochemistry (Constitutional isomers, Stereoisomers, CIP rules) (Chapter 4)**
5. **Introduction to Organic reaction mechanisms (Chapter 5)**
6. **Acids and Bases in Organic Chemistry (Chapter 6)**
7. **π-bonds as electrophiles (chapter 7)**
8. **π-bonds as nuclophiles (chapter 7)**
9. **Free radical halogenation reactions: (Chapter 19)**
10. **Nucleophilic substitution reactions and elimination Reactions: (Chapter 11 and 12)**

Mondays and Tuesdays:

- The lecture videos for each week will be posted the previous day (with the exception of week 1)
- Watch the videos sometime before the corresponding afternoon seminar
- We will meet on collaborate in a seminar to discuss the lecture video, I envision us using this time to solve problems together, and I encourage you to email me if there are any problems you would like me to work through during the seminar (these meetings will also be recorded)
- Each Chapter will have accompanying textbook readings and practice problems (these won't be collected or marked, but solutions will be posted) Prior to the seminars is a great time to start looking at the readings, after the seminars is a great time to start looking at the practice problems

Wednesdays

- There will be 4 Wednesday quizzes listed in the schedule above
- They will be available on D2L at 3:30pm and are due at 8:00pm the same day, these are designed as 1 hour quizzes, and they are available for a 4.5 hour block to provide some flexibility.
- As they are quizzes I expect that they will be completed by **yourself** only, with the **textbook**, your **course notes**, and a **calculator** as your only resources (please notice the absence of google, or any other search engine or database on this approved list of resources)

- I encourage you to dedicate some time on Wednesdays to working assigned practice problems while the seminar material is fresh

Thursdays

- We will meet on collaborate to discuss the virtual lab assignments
- lab materials (assignment sheets/prelab videos) will be posted the previous day (The meeting will also be recorded)
- Lab Assignments will be due on D2L at 4pm the following week

Fridays

- BACON tutorials will be available on Mondays and due the same Friday at 4pm
- Sign-in details will be posted on D2L and discussed in week 2
- These tutorials will follow the course material, but may extend further into practical applications of organic chemistry!

5. Basis of Student Assessment (Weighting)

	Category	Breakdown
Lecture	**BACON online homework assignments**	**10%**
	Quizzes	**35%** The best 4/5 quizzes will make up your mark
	Everyday Organic (EDO)	**5%** EDO I - 2% EDO II - 3%
Lab	**Labs**	**20%** 5 Lab Assignments
Final Exam	**Final Exam**	**30%**

Biology And Chemistry Online Notes and tutorials (BACON)

- These due dates will be 4pm on the dates posted in section 4 above
- Overall BACON marks will be rounded as follows
    - >90% = 100%
    - 80%-90% = 90%
    - 70%-80% = 80%
    - <70% Raw mark

Quizzes

- Quizzes cannot be rewritten
- The weight of any missed quiz will count as the lowest quiz mark and be dropped.
- The weight of any subsequent missed quizzes will be transferred to the final exam, provided the instructor is notified ***prior*** to the quiz.

Everyday Organic

- These will be two projects that will give you a chance to explore everyday organic chemistry, we will discuss these projects in more detail in weeks 3 and 10

Lab

- Lab assignments will be due at 4pm the Thursday after we meet to discuss them
- Late labs will be penalized 20% and will no longer be accepted 1 week after the deadline

Final Exam

- This will take place at time and date TBA during the final exam period, it will just be a longer version of what you have seen in the quizzes, a practice final will also be distributed towards the end of the term

6. Grading System

[X] Standard Grading System (GPA)

[ ] Competency Based Grading System

7. Recommended Materials to Assist Students to Succeed Throughout the Course

Your instructor and the text book are both excellent resources, use them as much as you can!

The **Camosun Science Help Center** also provides excellent help through the Chemistry Help Desk, they are available to meet through collaborate 3 hours a day, 6 days a week

Hours:

Monday	**4:30-7:30pm**
Tuesday	**4:30-7:30pm**
Wednesday	
Thursday	**3:00-6:00pm**
Friday	**9:30-12:30am**
Saturday	**10:00am-1:00pm**

The link to the **Chemistry Help desk**:

https://ca.bbcollab.com/collab/ui/session/guest/26ea0383a00444b39291183944267d53

An excellent **online organic basic organic nomenclature practice tool** is available for free at

http://www.chem.ucalgary.ca/courses/351/WebContent/orgnom/structureToName.html

8. College Supports, Services and Policies

Immediate, Urgent, or Emergency Support
If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ http://camosun.ca/about/mental-health/emergency.html or http://camosun.ca/services/sexual-violence/get-support.html#urgent

College Services
Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at http://camosun.ca/

College Policies
Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at http://camosun.ca/about/policies/. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence, Student Ancillary Fees, Academic Integrity, Grade Review & Appeals, Student Misconduct and Academic Accommodations for Students with Disabilities and Student Penalties and Fines.

A. GRADING SYSTEMS *http://camosun.ca/about/policies/index.html*

The following two grading systems are used at Camosun College:

1. Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

B. 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 http://camosun.ca/about/policies/index.html for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	*Incomplete*: 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.
IP	*In progress*: 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.
CW	*Compulsory Withdrawal*: 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.