SAMPLE COURSE OUTLINE

Course Code, Number, and Title:

CHEM 2216: Organic Chemistry for the Biological Sciences

Course Format:
[Course format may vary by instructor. The typical course format would be:]

Lecture 4 h + Seminar 0 h + Lab 3 h

Credits: 4

Transfer credit: For information, visit bctransferguide.ca

Course Description, Prerequisites, Corequisites:

This organic chemistry course is intended for students in the biological sciences. Topics include properties of aromatic compounds, reactions and properties of alkenes, alkynes, cabonyl compounds, and carbohydrates. Not intended for students completing a Chemistry or Biochemistry major.

Prerequisites: CHEM 1220 or equivalent. Prerequisites are valid for only three years.

Learning Outcomes:
Upon successful completion of this course, students will be able to:

- Apply concepts such as bond-polarity, acid-base theories, nucleophilicity and electrophilicity to predict and describe physical and chemical properties of functional groups commonly found in biological chemistry, such as alkenes, alcohols, aromatics, aldehydes, ketones, carboxylic acids and their derivatives
- Analyze the spatial arrangements of molecules using the concepts of asymmetry and chirality
- Identify the products of chemical reactions involving alkenes, alkynes, alcohols, aldehydes, ketones, carboxylic acids and their derivatives, and propose reagents to carry out functional group conversions and carbon-carbon bond formation involving these groups
- Write reasonable, step-by-step reaction mechanisms for the chemical transformations studied, and explain how this qualitative description of the structural and energetic changes taking place in a chemical reaction allows us to account for product distribution
- Recognize and name a variety of simple carbohydrates
- Design logical, multi-step syntheses of target compounds from simple starting materials using the functional group transformations and the carbon-carbon bond formation techniques learned throughout the course
- Demonstrate safe and environmentally responsible laboratory activity
- Write clear laboratory notes and reports in a format typical of the discipline
- Assemble and operate laboratory apparatus for the techniques of simple and fractional distillation, reflux, recrystallization, solvent extraction, sublimation, filtration, simple chemical transformations, and melting point determination

Instructor(s): TBA
Office: TBA **Phone: 604 323 XXXX** **Email: TBA**

Office Hours: TBA

Textbook and Course Materials:
[Textbook selection may vary by instructor. An example of texts and course materials for this course might be:}

McMurry, J. "Organic Chemistry".

Lab manual

Note: *This course may use an electronic (online) instructional resource that is located outside of Canada for mandatory graded class work. You may be required to enter personal information, such as your name and email address, to log in to this resource. This means that your personal information could be stored on servers located outside of Canada and may be accessed by U.S. authorities, subject to federal laws. Where possible, you may log in with an email pseudonym as long as you provide the pseudonym to me so I can identify you when reviewing your class work.*

Assessments and Weighting:
Final Exam 35%
Other Assessments %
(An example of other assessments might be:) %

Midterm Exam: 3 x 15%
Lab work: 20%

Proportion of individual and group work:
Individual: 100%

Grading System: Letter grade
Specific grading schemes will be detailed in each course section outline.

Passing grade: D

Topics Covered:
[Topics covered may vary by instructor. An example of topics covered might be:]

- Review of Chemistry Fundamentals
- Alkene Reactions
- Alkyne Reactions
- Benzene and Aromaticity

- Aldehydes and Ketones
- Carboxyic Acids and Derivatives
- Carbohydrates
- Carbonyl Alpha Substitutions and Carbonyl Condensation Reactions

As a student at Langara, you are responsible for familiarizing yourself and complying with the following policies:

College Policies:

E1003 - Student Code of Conduct
F1004 - Code of Academic Conduct
E2008 - Academic Standing - Academic Probation and Academic Suspension
E2006 - Appeal of Final Grade
F1002 - Concerns about Instruction
E2011 - Withdrawal from Courses

Departmental/Course Policies:

This generic outline is for planning purposes only.